Controlling tobacco: From moral regulation to governing the neurochemical self

By,

Byron Rogers, BA (Hons)

A thesis submitted to the Department of Sociology & Anthropology
in partial fulfillment of the requirements for the degree of
Master of Arts

to

The Faculty of Graduate Studies and Research
Department of Sociology & Anthropology
Carleton University
Ottawa, Canada
May, 2010

Your file Votre référence
ISBN: 978-0-494-81607-3
Our file Notre référence
ISBN: 978-0-494-81607-3

Abstract

Tobacco control is here considered as a Foucaultian biopolitical project, heavily reliant on the moral force of the social denormalization of smoking, the largest such public health intervention undertaken in modern times and a possible model for other health-related projects aiming to modify the behaviour or citizen-consumers. It is argued that the risks of tobacco pivot on a changing, historically contingent concept 'addiction', whose most recent instantiation is conceptualized in neurochemical and genetic terms (the 'brain science paradigm'). Possible limits to the success of tobacco control as a societal project are explored, concluding speculatively that the emerging idea of nicotine neurochemical selfhood may imply that in future dependence on different forms of nicotine could attract different forms of governance.

ACKNOWLEDGEMENT

I am grateful for the guidance of Professor Alan Hunt in helping me formulate the key ideas of this thesis over quite a number of years while I was a (very) part-time student.

Thanks also to Carlos Novas for advice and to Hugh Armstrong (as well as the above-named supervisor and advisor) for eagle-eyed corrections and clarifications.

"Forget your perfect offering,
There is a crack in everything...that's how the light gets in"

Leonard Cohen, 'Anthem', from the album *The Future* (1992)

Disclaimer

Views expressed or implied in this document are solely those of the author, Byron Rogers and should not be attributed to his employer, Health Canada

All citations and sources are public documents/ web sites/ open social science literature

Table of Contents

"New approaches to tobacco control policy have the potential to contribute to the creation of longer and healthier lives for millions of people; alternatively, new policies could worsen their fate. The effect will depend on the nature of the policy and how it is implemented...Public policy is a kind of technology and public policy related to tobacco must be evaluated on the basis of the effects it produces."

LT Kozlowski, JE Henningfield & J Brigham, *Cigarettes, Nicotine & Health: A Biobehavioral Approach* (2001): 139

'The ways that individuals think, act and feel have increasingly come to be described in relation to receptors, synapses and other structures of the brain, and in terms of the flows of neurotransmitters within those structures."

Scott Vrecko, 'Folk neurology & the remaking of identity', 2006: 300

Introduction

At once personal and political, individual and statistical, the tobacco cigarette has smoldered throughout the twentieth century and beyond, at the junction of the anatomo-politics of the human body and the bio-politics of the population [Foucault 1978; Armstrong, 1983]. Tobacco control was the first and has become one of the highest profile health-related projects of modernity. The "cigarette century" [Brandt, 2007] is shaping up to be a long century for those parts of the world considered modern, where the issues around tobacco use remain only partly resolved, while for the rest of the world, another century of the cigarette is already underway [Jha & Chaloupka, 2000].

Tobacco control has become a widely recognized project of Canadian governments, irrespective of the party in power, particularly over the past 20 years since tobacco products became subject to legal regulation at both federal [viz., TPCA 1989; TSYPA 1994; TA 1997] and provincial levels of government [eg., Smoke-Free Ontario Act, 2008]. A relatively modest health department-sponsored 'smoking and health' public education program in the early 1960s ramified throughout all Canadian jurisdictions to comprise a level of intervention characterized as both strategic [viz., Federal Tobacco Control Strategy 2100-2011; Nunavut Tobacco Strategy 2004; Ontario's Tobacco Strategy, 2008] and governmentalized (see below)[1] in the period extending from the late 1980s to the present day.

Canada has not been alone in this venture, far from it. As Marmor & Lieberman noted, "...by the end of the twentieth century, diverse modern democracies [ranging from Norway to Australia] had come to use very similar instruments in the effort to discourage smoking in their populations...[T]he last two decades of the century were years of convergence in the tobacco control agendas of all the industrial democracies" [2004: 276]. The same authors also note "the increased salience in contemporary

---

[1] Foucault uses this term to describe the 'governmentalization of the state', signalling a shift from relying strictly on sovereign power to subtler forms of governing involving the interpenetration of the state with civil society. Here it refers to the state/civil society biopolitical strategies whereby the state accomplishes its aims partly through partnerships and collaboration with civil society or NGO sector agencies, in part funded by the state.

control regimes of "denormalizing smoking" [Studlar 2002] which they characterize as making smoking itself "sinful, stupid or both" [ibid: 285; see also 'www.stupid.ca', an Ontario government web site]. These political scientists classify Canada as a "high dose" [of interventions] country and seek explanations of comparative intensity of governmentalized tobacco control activity in terms of differences in political culture. For example, "general norms and customs regarding the paternalistic nature of the state and authority, and the value of liberal individualism" and "more general cultural orientations towards well-being" [ibid: 286-87]. What is especially notable about tobacco control in North America and in other countries of the 'Anglosphere' [but also now including Quebec (viz., *Info-Tabac.ca*)], is that "the process of denormalization and the attendant stigmatization have been increasingly seen as powerful allies:

> Where anti-smoking educational campaigns, advertising restrictions and other explicit policy interventions had not, at least individually, reconfigured the moral meaning of smoking, their accumulated weight [with the addition of smoking restrictions] was used to recast the social meaning of cigarettes and smokers" [ibid: 305].

Thus Canada is among the countries that have with varying degrees of success adopted measures that in effect fleshed out public health theorist Geoffrey Rose's 'strategy of prevention': multiple, integrated measures assembled by government and civil society agents, designed to shift the population curve of the normativity of smoking by way of moralization, denormalization and moral regulation [Rose 1985, 1993; Rozin & Brandt, 1997; Rozin 1999 a,b; Hunt, 1999, 2003] with a view to achieving public health goals.

This paper reviews selected aspects of the record of, and examines possible futures for, the societal project designated as 'tobacco control' through the lens of the analytics of government as outlined by such authors as Mitchell Dean, Nikolas Rose and Peter Miller, following social philosopher Michel Foucault's knowledge/power linkage for which he coined the resonant terms 'governmentality' and 'biopolitics' [Foucault: 1991; Foucault: 1979 (2008); Miller & Rose, 2008].

Tobacco control is typically described as public health, "efforts by societies and individuals to prevent disease, prolong life and promote health" [Berridge & Loughlin 2005: 1]. The public health project of 'tobacco control', seen through an analytics of government prism, constitutes a consummate example of modern biopolitics, a politics of the 'species body'; that is to say, "projects aiming to affect the conditions of existence, the levels of health, life expectancy and longevity of the population, forces that could be modified through various combinations of regulatory controls, discipline and associated knowledge(s)" [Foucault, 1979:143]. [2] The new relationship brought into being between politics and ontology that Foucault envisioned implies the coordination of efforts by state authorities working on multiple levels through non-state actors to modify health-related *ways of living* by individuals that ultimately affect the disposition of entire populations, as proposed and promoted for health purposes by epidemiological theorist Sir Geoffrey Rose [1985, 1993]. State-sponsored efforts across most industrialized, consumer societies over the past few decades that have aspired to 'control tobacco' -- by which is meant reducing the use of tobacco -- would appear to be quintessential examples of biopolitics: ethically informed orchestrations of the conduct of conduct, working through the freedom of subjects who may comply or resist in varying degrees.

In view of the rationalities of risk and governance associated with this biopolitical project, this paper discusses how: (i) initial programmatic efforts by governments to intervene on the public health problem of tobacco smoking through public education had little impact, to be replaced by still other interventions with more intensive and extensive governmentalized and regulatory components, including complex state/civil society inter-relationships; (ii) the extent to which Canadian efforts, while considered relatively successful and even renowned internationally, are increasingly constrained by the combined effects of different forms of resistance and barriers, including: the growth of a structurally and culturally significant contraband economy, initially in reaction to high tobacco taxes, then as a community development strategy within certain First

[2] For "knowledges", read relevant "expertise" relating to the particulars of the population, its vital rates & behavioural norms, intervention methods, the workings of the economy, etc.

Nations Territories [www.Smokers'ClubInc, Tyendinaga, 2008, accessed 14.4.10]; the persistence of the tobacco products industry as an adaptive force, even though regulated; changing understandings of the subjectivities of remaining 'harder core' tobacco users increasingly framed as 'addicts'; and the difficulty of overcoming the social structural constraints viewed as the 'social determinants of health'; and, (iii) how, over the longer term, in line with emerging visceral understandings of the addiction construct and the notion of the 'somatic self' as applied to tobacco, or more specifically of "neurochemical selfhood" [Novas & N. Rose, 2001; N. Rose, 2003] in relation to nicotine, the future trajectory of tobacco use may be characterized not by a much-predicted and hoped-for complete elimination of either smoking or, more generally, of tobacco, but by ongoing tobacco use indefinitely into the future. The patterns of use seem likely to change, characterized by lower overall levels of consumption of tobacco, together with greater differentiation of types of tobacco and nicotine product use. As a consequence of these projected shifts and mutations, Canada will eventually experience sustained lower levels of tobacco-attributable harm, even though there are reasons to believe that 'controlling tobacco' cannot be expected to entirely extinguish the cigarette, completely banish tobacco use nor bring an end to dependence on nicotine.

Rather than the normative curve of tobacco's being shifted indefinitely towards ever lower levels of use, as theorized by Geoffrey Rose and promoted by anti-tobacco public health advocates [see, for example, Chaiton, Cohen & Frank, 2008], tobacco use – or more properly, nicotine addiction, variously construed and addressed by both treatment options and novel consumer products – seems likely to continue indefinitely.

The question raised in this paper is about the consequences for how the associated behaviours may be governed differently in future. The projected changing profile of tobacco usage into residual cigarette smoking alongside an array of non-smoked nicotine delivery alternatives (whether therapeutic or recreational) could render smokers and the users of other tobacco/nicotine products that do not require

combustion, whether or not the users in each case are construed as 'addicts', governable in very different ways.

Even as smoking as the primary means of nicotine ingestion seems likely to remain highly stigmatized and governed by moral regulation, other forms of nicotine and tobacco use may escape censure and become invisibly socially embedded, in parallel with existing pharmaceutical habits and their associated subjectivities. The ultimate rationale for this admittedly hypothetical outlook would be founded in the emergent recognition of the discursive formation developed around the genetic neurochemical selfhood of the persistent nicotine user, in which tobacco use is framed as addiction and addiction as a function of elements of brain structure thought to be under genetic control.

The broader context of 'tobacco control'

Tobacco control in its most comprehensive and interventionist forms has evolved at a particular historical juncture of late modernity. Tobacco first became problematized before Medicare policies had been adopted in Canada (1966), and evolved gradually through the transitional decades when the still incomplete welfare state had begun a gradual transformation in the direction of increasingly 'neo-liberal' approach to governing. The latter shift is understood here in terms of the government relying increasingly on the strength of the autonomy of 'responsibilized' citizens conceived primarily in their role as consumers [N. Rose,1999: 160-65]. The emergence of elements of neo-liberalism has been something of a sea change in the basic assumptions of public policy over the period of time in which tobacco control has been operating at a strategic level in Canada. Tobacco control strategies continued to be pursued in ever more elaborate form by Canadian governments throughout this period of emergent neo-liberalism, relatively immune from political party and ideological changes. Tobacco control efforts can be said to have both instantiated the shift towards neo-liberalism, beginning in the 1970s in Canada with the rise of individually oriented 'lifestyle' interventions [Lalonde, 1974]), but also to have moved beyond the initial sole focus on

the individual to encompass changes in the enabling factors associated with the market, if not yet of the underlying social determinants of health. Despite charges that all risk factor–based health promotion has individual-oriented, even victim-blaming affinities with neo-liberalism [Coburn 2004] tobacco control has continued to target both enabling environments (viz., the tobacco industry's market activities are regulated) and the individual (viz., exhorted to engage with self-help) with respect to achieving both the prevention of youth smoking uptake and increases in adult smoking cessation.

This changing context of shifting larger-scale political rationalities towards neo-liberalism has been obscured by the fact the Canada continues to support a universal health care system, one which coincidentally came into being only two years after the milestone findings of the US Surgeon General's report of 1964 signaled the arrival of a scientific consensus that smoking caused adverse health effects and thereby impacted upon the opportunity costs of maintaining and improving population health. Tobacco control has achieved its continuity as a policy through the combined effects of expert knowledge (a scientific consensus that about one death in five annually in Canada could be attributed to tobacco use) and the forging and maintaining of partnerships with civil society groups with strong single issue advocacy positions [Non-Smokers' Rights Association (NSRA); Physicians for a Smoke-Free Canada (PSFC)] as well as significant lobbying resources [Canadian Cancer Society (CCS)].

Tobacco politics are biopolitics in the sense that they impact upon and are seen as having the potential to determine the 'fate of millions', at least inasmuch as longer and healthier life for individuals is now both a widespread public expectation and political objective [Remennick, 1998]. Enhancing health and well-being through behavioural change has become a presumed imperative for numerous government health policies and strategies, now encompassing specific diseases (Cancer Strategy, Diabetes Strategy), organs (Lung Health Strategy), substances (Drugs Strategy) and bodily conditions conducive of ill-health (Obesity Strategy). For all of these and possibly others, the tobacco control project may be said to have provided the 'comprehensive, integrated, sustained' blueprint for a range of modern biopolitical endeavours.

Tobacco Control Governmentality[3]

Governing through freedom

The subjects of modern Government comprise a population whose freedom constitutes itself through the process of being governed through a specific rationality of governance Foucault characterized this governing rationality in terms of (i) *biopolitics*, or governing with the aim of knowing by way of inscription processes (i.e., systematic documentation, expert social technologies) the population and its relevant characteristics both *en masse* and individually ("*omnes et singulatim*" as Foucault would have it [1981]) in order to enhance overall societal health, wealth and welfare; and (ii) *liberalism*, or governing with calculated and calibrated effect, with a concern for both an "economy of power" [Foucault, 1980. 104-105] and for maintaining the workings of "the economy" as far as possible as a self-governing sphere of activity [Miller & N. Rose, 1992].

Although most of the analyses from this perspective address fairly broad political and economic themes, or the rise and strategic application of psychological disciplines [N Rose, 1989], a 'postmodern health' analytic inspired by post-structuralist thought began to make an appearance in recent years [Glassner, 1989; Fox, 1994]. These efforts to radically recast thinking about health arose from the cultural accounts of health that focused increasingly on medical and health theories and practices, and the policies

[3] Why governmentality? There are alternative sociological approaches which also encompass the mutual intertwining of agency, structure and practices, namely Giddens' notion of 'structuration' [A Giddens, 1984] and Bourdieu's concept of the 'habitus' [P Bourdieu, 1984] The choice of governmentality terminology reflects (i) the usefulness of considering the issues around tobacco control in terms of concepts of governance, freedom/unfreedom and resistance, which brings into play political rationalities, without necessitating a frank political analysis, and the idea of biopolitics, which situates health promotion in a larger historical field outlined by Foucault [*Birth of Biopolitics*, 1978-79, 2008, *Security, Territory, Population*, 1977-78, 2007], (ii) the focus on *governmental* measures and their intended effects, which aim to alter or influence agency/ structure/ practices with respect to behaviours associated with moral advocacy and the policy concerns of health authorities, and (iii) the advantage of sidestepping some of the distracting complexities of reflexivity and recursivity that a purely theoretical approach would entail In short, this paper proposes a hybrid of social theory and policy analysis, with the *proviso* that it makes no policy prescriptions Its conclusions are held out as plausible speculations about some central tendencies implicit in the biopolitical project described as 'controlling tobacco', based on the addiction concept that is, paradoxically, both historically contingent & unchanging

related to these, as symbolic systems and forms of discourse implicated in power relations [Crawford, 1984; Lupton, 1995]. Influenced both by the writings of Foucault and the reflexive application to Western societies of the anthropological gaze, these approaches challenge received accounts of health on a number of levels. They raise important new questions about what counts as knowledge and to whom, thus opening ways to better understand both compliance and resistance.

They open up the possibility for a more nuanced critique of the relationship between persuasive social communication whether in the name of health (social marketing and health promotion) or in the interests of harmful commodity promotion, that are implicated in the formation of consumer identities. Finally, these new approaches lead us to ask about the actual outcomes of policy efforts in new ways: in terms of social perceptions and cultural constructions of the body, health behavior change and resistance to change, as well as contemplation of the constraints and perhaps even limits of managing the health status of populations under varying degrees of social inequality [Lupton, 1995; Petersen & Lupton, 1996; Wilkinson, 1996].

From the perspective of the impacts, planned or otherwise, of modern laws, regulations and other governmental interventions emanating from the state, a key desideratum is coming to be recognized as the *self*, the sort of person whose innermost motivations, behavior and even 'soul' is implicitly the object of the process of governing. In terms of Foucault's analytical strategy, *subjectification* is implicated in projects of governance, is in fact the reflexive product of government rendered feasible through the normalizing power of discourses anchored in "regimes of truth" [Foucault, 1980: 92-108, especially 106-107]. Modern citizens, the 'objects' of policy, become so only to the extent that they can be understood by policy authorities as "calculable minds and manageable individuals"; that is, to the extent that they can be construed as "governable persons" [N. Rose, 1988, 1989].

Whether through unthinking conformity or active resistance, people constitute themselves as social beings through interaction with processes of governance based on

knowledge allied with power, designated by Foucault as a mutually constitutive interdependence of knowledge/power [Foucault, 1980]. Governance may be exercised from multiple sites, but a preponderance emanates from or intersects with the state and its associated apparatuses [Hunt, 1993: 273, 276 *et passim*].

Because considerations of health are so intimately linked to the conduct of everyday life and aspects of self-identity, this notion of self-constitution through governing discourses would appear to apply, *a fortiori* in the case of discourses constructed around the promotion of health. The governmentality perspective suggests this will be the case whether effective discourses originate from official agencies of the state, popular folklore, the identity-formation process of youthful 'peer pressure, the burgeoning market for health-related products or from the lifestyle-oriented promotional pitches of industries selling products whose purpose is to fulfill the pleasurable promises of consumption, but which also have health implications. What the governmentality perspective calls to our attention is that all these formulations operate concurrently and conflictually to constitute subjects discursively.

Foucault's project, in one of its late re-workings, was to "construct a genealogy of the subject" by uncovering the "articulation of certain techniques [of government] and certain kinds of discourses about the subject" [Foucault, 1993:201]. In explicating this "hermeneutics of self" as a by-product of the emergence of liberal forms of government, Foucault outlined in an original way the basic problematic of politics under conditions of modernity:

> "Governing people...is not a way to force people to do what the governor wants; it is always a versatile equilibrium, with complementarity and conflicts between techniques which assure coercion and processes through which the self is constructed or modified by himself" [Foucault, 1993:203-04]

or, as Rose & Miller note,

> "Power is not so much a matter of imposing constraints upon citizens as of 'making up' citizens capable of bearing a kind of regulated freedom" [1992:174]

These formulations draw attention to the interdependencies that characterize the asymmetrical relations between agencies of governance (viz., 'Government' in this instance), including in particular the state, but also intermediate institutions like schools and economic institutions like corporations, and 'the governed'.

> "A 'liberal' society...would, then, not be an ungoverned society or even a minimally governed society; it would be, rather, a *delicately* governed society" [Osborne, 1994: 488].

In describing various forms of liberalism in terms of rationalities of effective, efficient government, Foucault also provides a perspective for examining the achievements and the problematics of public policy purposes through the deployment of discourses and their associated, techniques and inscriptions or, collectively, "discursive formations" [Foucault, 1972:31-40]. In health promotion, these may consist of assemblages of brochures, guidance pamphlets, instructional videos, tabulated survey data, televised public service announcements and health warning messages on cigarette packaging, as well as other, more technical texts of supporting documentation.

In matters of official governance, whatever the specific objectives, these formations and their discursive scientific rationales comprise "regimes of truth" [Foucault, 1980: 131]. Truth regimes provide the rhetorical sources for the interpellation of subjects, enunciated in the expectation that they will be recognized by people as having a truth value, thereby constituting a reliable basis for the desired action, their freely chosen 'compliance'. [3]

---

[3] Discursive formations of official origin disseminate into an 'information environment' characterized by a 'proliferation of discourses', many organized around notions of self-help and self-formation. Simply by virtue of their official origin, some discourses become predominant, but not 'hegemonic' [see Hunt, 1993: 293-300]. In addition, the risk information environment is complicated by the

When governance adheres in formal 'Government', as in the case of regulatory law, the notion of a regime of truth becomes central to understanding both the constraints involved in achieving regulation and in the degree of uncoerced *compliance* that may be achievable. For Foucault, power, in the present instance the authority to regulate, denotes a productive, not a repressive or destructive force. "Relations of power are not in superstructural positions, with merely a role of prohibition or accompaniment; they have a directly productive role" [Foucault, 1978:94] or, more trenchantly, "[T]he individual which power has constituted is at the same time its vehicle" [Foucault, 1980:98]. If the operation of power/knowledge is constitutive of its subjects, then the outcome of superficially technicist regulation entails not simply 'changes in behavior', but a change in how people actually constitute themselves as ethical subjects; for example, as non-smokers or people who as a matter of course plan their actions so as not to drive while impaired. In other words, there is an inescapable moral component to regulatory endeavours that warrants the term 'moral regulation' to these projects [Hunt, 1993:314].

> "With the emplacement of bio-power in modern Western societies, that is, the installation of a pastoral power concerned with the regulation, management and welfare of populations, failure to achieve programmed goals has merely confirmed the need for better administration or management, in short for the extension of the exercise of power over life, for a technical solution to what has increasingly come to be defined as a technical rather than a political problem" [Smart, 1985: 106]

In effect, modern forms of governance operate by subsuming political questions, policies and programs addressing issues embedded in power differentials through the social body, as technical matters with demonstrably acceptable parameters, a rational scientific grounding that amounts to reliable knowledge about problems and their

---

organized efforts of vested tobacco interests to "manufacture doubt" [Brandt, 2007; Proctor & Schiebinger, 2008].

causes, and plausible bases for expecting predictable outcomes or 'solutions' to be derived by way of policies.

Truths about matters of public policy, or, more properly, truth claims or accounts, are always contestable under the conditions of possibility of 'liberal' government. Accordingly, public policy measures are installed by means of public debates in which the truth claims in the form of discourses and counter-discourses are considered in terms of both science and the play of vested and other interests. Interests may to varying degrees be visible or may be uncovered in the course of public debate and are here assumed to be more or less determinative of the resultant political positions.

In the health regulatory debates which concern us here, for example, discourses of 'freedom' and 'individual choice' are deployed by the tobacco industry to fend off product regulation, to maintain corporate self-governance and freedom of marketing action, bringing into play the interests of smokers framed as consumers rather than as potential victims who may suffer varying degrees of severe ill-health as a consequence of smoking. Similar discourses are mobilized by authorities in the rhetoric of health promotion, where the efforts are exerted towards creating awareness of the risks in ways that are hoped to achieve personal relevance to an audience constructed as consisting of smokers, former smokers and would-be smokers. The deployment of these kinds of discourses by corporations with a vested interest in the continued sales of a profitable product readily suggests their ideological nature, whereby specific (corporate) interests are (mis-) represented as broader, if not universal interests [Purvis & Hunt, 1993:497], for example tobacco industry discourse about 'rights of the smoker' (not that such rights may not exist in some form, but they are entrained into other an anti-regulatory agenda relating to the cigarette industry – see Brandt, 2007: 298-302; www.MyChoice.ca)
The claims of anti-smoking interveners can similarly be ascribed to underlying interests, despite a glossier veneer of apparent disinterestedness, since both their status as moral agents able to influence policy and the security of their funding sources are dependent upon their perceived effectiveness. As for Government, the sheer breadth of

societal interests concurrently vested in the state and its apparatuses - health, revenue (including tobacco taxation), heritage, agriculture, trade - ensures that discourses of health promotion cannot simply be taken at face value even though founded in scientifically defensible rationales.

These sorts of policy debates tend to be characterized by the mobilization of rhetoric around claims and counter-claims which attempt to marshal scientific evidence in order to advance the credibility of positions with the publics and key decision-makers. In the course of such debates, the very criteria for acceptance of policy-relevant 'truths' may be brought into play, as when the alleged health hazards of second-hand tobacco smoke or of cannabis smoking are challenged as a means of contesting the legal status of these objects of regulation.

> 'Science possesses a rhetoric as well as a rationale. It is not that knowledgeable conclusions and theories are 'wrong', in the sense of being incorrect and invalid as general statements. It is that the style of scientific presentation and its transmission to interested publics create a reality of undoubted certitude...it is that the system of asking questions excludes alternative ways of asking" [Gusfield, 1981:187].

More pragmatically, it is seldom possible for policies, to the extent they strive for at least the rudiments of consistency, to address questions in more than one way at a time. In fact, designers of policies tend to have some model of appropriate action relating to presumed efficaciousness in addressing an identified problem. It is that specific approach which tends to guide action for a time. These intellectual constructs or *gestalts*, themselves discursive formations, have also been dubbed 'policy paradigms', succeeding one another through the piling up and gradual recognition within policy sub-systems of anomalous outcomes [Howland & Ramesh, 1995].

The "perpetually failing" characterization of such an enterprise stems in part from the intractable nature of interests and of real or imputed features of the objects of policy intervention themselves. The objective of reducing the extent of use of a psychoactive substance may be inherently difficult due to a predominantly essentialist understanding of people, substances or addiction, in addition to social structural factors that are not affected by health promotion intervention measures. More fundamentally, perpetual 'failure', or, more positively, rebounding optimism, stems from the notion that, as a rationality or process of governance, the art of delicate government, or liberalism, is supposed to be continually subjected to critique. Rose & Miller note that "government [including Government] is a *problematizing* activity" and that "the ideals of government are intrinsically linked to the problems around which it circulates, the failings it seeks to rectify, the ills it seeks to cure" [ibid: 181]:

> "The 'real' always resists programming, hence, of necessity, the programmer's world is one of constant experiment, invention, failure, critique and adjustment" [Miller & N. Rose, 1992:14]

In the Foucaultian perspective, just as health may be said to be 'a resource for living' or capacity for coping, freedom may be thought of as 'a resource for government' and liberalism an "*ethos* of government....not so much a substantive doctrine or practice of government in itself, but as a restless and dissatisfied ethos of recurrent critique of State reason and politics" [Barry, Osborne & N. Rose, 1996:8]. In effect, what Foucault designates as 'liberalism' is the open-ended art of government conceived as an exercise in continual learning and improvement at the level of the management, by means of public policies, of the health, wealth and welfare of populations.

Generically, these sorts of concerns have tended to be the business of policy analysis, a field that has undergone extensive renovation as a consequence of post-positivist, institutionalist and post-structuralist challenges to its tenets and methods. Carleton University's Leslie Pal has pointed to the growing role of "exhortation" and

"information-based instruments" as policy levers, partly in response to contradictory pressures on direct regulation, including new constraints on regulation, new demands for regulation and shifts in regulatory venue [Pal, 1997:116, 123].

Governments, Pal notes,

> "now prefer to design policies around self-regulative instruments, or set framework regulations that look to results rather than micro-management of behavior. There is more reliance on individual responsibility...at the same time, however, there are signs that there is a new interest in values and character as a policy target." [1997:272]

Pal captures the essence of the shift in emphasis found in modern governance as one from policy analysis to "issue management", the latter having the more realistic connotation that policy problems may be repeatedly re-problematized, but not necessarily 'solved'. Instead, each problematization involves, from the viewpoint of governance, the management of a variety of issues which concatenate in specific ways to constitute the current construction of 'the problem'.

Health promotion discourses in general provide rich sources of examples for 'perpetually failing' projects, notwithstanding intermediate levels of 'success'; namely, policy-driven efforts by state agencies to improve population health, a moving target, by way of an ever-increasing range of interventions: information, moral suasion, regulation and state-sponsored 'community action' (sometimes referred to as 'capacity-building').

One key to understanding the intersection between the generic notions of governmentality and the specific case of tobacco control policy lies in reviewing successive *problematizations* of the smoking issue in Canada: viz., cigarettes as a signifier of youthful delinquency; the seduction of youth by cigarette advertising; the 'hard core' smoker; the health risks associated with second-hand (and lately even 'third

hand') [Ballantyne, 2009; Ostrow, 2010]) tobacco smoke; the smoker as a social pariah; smoking as emblematic of lower class or marginal status; tobacco as a sacred aboriginal ceremonial rite; etc . How have the objects of tobacco control policy shifted over time, how have they constituted their implied subjects, including smokers, the tobacco industry and the place of tobacco as a problematic substance in a society that with two exceptions, tobacco and alcohol, has traditionally responded to non-medical drugs use by way of legal prohibition?

Health promotion discourses and the policies associated with them around the issue of smoking tobacco, a legal, but highly addictive product, offer some prime sites for exploring the recurring problematizations of health policy. This may best be viewed as an open-ended search for prevention and protection through modifying human behavior - in Foucaultian terms, creating the conditions of possibility for the self-constitution of healthier people - in a free society of liberal governance.

Assembling 'tobacco control'

Britain's premier historian of substance policies, Virginia Berridge describes in some detail the interpenetration of state and civil society in the unfolding of tobacco control in Canada as a matter of fuzzy or diffuse boundaries [1999: 1186]. Berridge emphasizes the new public health's reliance on technical expertise, a trend unpacked in greater detail for post-war government of the conduct of conduct in the early work of Nikolas Rose [1993, 1994]

Since 2001, if not somewhat earlier, the Canadian tobacco control project has been conducted through a combination of state and non-state (civil society) actors, based on coordination, facilitation and negotiation between the state and a range of non-state, civil society organizations and experts.

Tobacco products and their use may well be the prime example of "an (everyday) activity [that] has been problematized and acted upon in the name of health" [N. Rose,

loc cit: 51]. 'Tobacco control' as a governmentalized project comprises a complex assemblage with discursive, taxation, programmatic and civil society elements, as well as formal legislative and regulatory mechanisms [Health Canada, Health Concerns (web site), FTCS]. This assemblage (envisioned and presented to the public in the form of a 'strategy') also brings together a number of different instrumentalities and practices, including laws and regulations restricting certain business activities, (eg., responsibilizing retailers for preventing sales of tobacco products to underage youth, requiring the display of health warning message labels on tobacco product packaging and prohibiting or restricting a broad range of advertising and promotional practices [Saffer & Chaloupka, 2000]); the social marketing or mass media and brochure-and web-based dissemination of health promotion information comprising advisory and hortatory messages [viz., www.HealthCanada, Health Concerns, Tobacco Product Labelling]; changes to tobacco excise tax schedules aimed at increasing the price and thereby reducing –although also unavoidably re-directing to contraband sources – demand for tobacco products [www.PS-FC/news releases/April 5, 2001]; the establishment and running of cigarette testing facilities independent of the tobacco product manufacturing industry to determine authoritatively the properties of tobacco products and their toxic emissions, as well as to audit technical information the manufacturers are required by law to report to Government [Tobacco Reporting Regulations, *Tobacco Act*, SC1997, c.13]; and the provision and promotion, of alternative nicotine products and related treatments aiming to enhance cessation from tobacco use, such as nicotine replacement therapies (NRT) and enabling infrastructures (viz., smokers' help lines, often referred to as 'quit lines')[www.Health Canada, Health Concerns/Quit Lines by Province]; and last, but not least, state policies partnered with elements of civil society in the form of NGOs (i.e., combinations of health charities, 'organ and disease' societies, single issue anti-smoking advocacy groups) provide the instrumentalities beyond the state, but also indirectly deployed by the state through funding 'contribution arrangements', extending to the partial governmentalization of the social movement dedicated to the anti-smoking cause. (In terms of the paradigm of 'governing through freedom', it is an important feature of contribution arrangements that advocacy groups retain their 'non-governmental' status, even as they are enrolled

into the governmentalized array of state and non-state actors collectively identified as the 'tobacco control strategy'.)

All these components assembled together in more or less comprehensive regimes of practice, guided by dedicated research designed to review available studies and evaluate outcomes, as well as establish 'best practices' and conduct forward-looking research ['www.CCTRI.ca'; OTRU] to address in greater depth the problematization of tobacco as a social issue in Canada.

Perhaps most visibly, tobacco control involves an epidemiological management and 'purification' of public space [Poland, 1998]. The re-zoning of public space and places is based on prevention of involuntary exposure to harmful tobacco smoke [USDHHS/PHS-1986; US-EPA, 1992], described by one of Canada's foremost risk analysts as the single most significant tobacco control measure [Leiss, 2001:257]. This key element of tobacco control, deployed to protect non-smokers from unwanted smoke exposure, also has the corollary impact of reducing smoking and reinforcing quit intentions. This may be an example of indirect paternalism (pastoralism in Foucault's terminology), whereby the restrictions imposed to protect from involuntary annoyance and risk also serve to effect changes in the source of risk. Together with numerous collateral means, such as mass media campaigns aimed at enhancing the public's awareness of risks emanating from both active and passive exposure to tobacco smoke, tobacco control constructs "subjects [who] are urged to problematize aspects of themselves and their lives in the name of health and to act towards [them] according to a logic prescribed for them by experts" [N. Rose, 1994:64]. Smoking behaviour in particular, the object of perhaps the most socially visible of all 'bio-political' interventions, is embedded in shifting and contested fields of knowledge/power emanating concurrently from the state (i.e., government health departments), cigarette makers and their lobbyists, policy advocacy organizations, single-minded individual "zealots" [Nathanson, 2007: 151, 278 (Note #55)], scientific experts and a variety of media in the form of a fluctuating amalgam of risk-based, harms-based and rights-based discourses.

Governmental discourses embedded in the state-sponsored project of tobacco control partake of diverse rationalities of the conduct of conduct. This likely reflects their emergence over a number of decades, due to the uneven, negotiated and partial implementation of political programs and consequently the partial installation of the appropriate social intervention techniques.

Smokers in particular are governed both with respect to themselves and their own behavior (eg., the health imperative of smoking cessation is officially promoted as the only rational response to being addicted to tobacco) and with respect to others (eg., legally binding restrictions on locations where smoking is permitted). Tobacco use is thereby controlled through both the inculcation of self-compliance for achieving cessation, and by way of responsibilization of venue managers to enforce anti-smoking by-laws against paying customers [Ottawa's Smoke-Free By-Law, 2002: www.ottawa.ca/ publichealth], a form of governance reaching beyond the state, or compliance by way of indirect or surrogate enforcement.

Although coherence is generally considered to be a positive quality for a Government program, the strategies of tobacco control owe a lot of their current ramification throughout all of Canada's federal and provincial jurisdictions to policy diffusion or "growth through pragmatic appropriateness" [Studlar, 2002]. What is remarkable for liberal democracies is the multi-leveled, multi-faceted complexity of, and sustained attention to, such efforts in the name of controlling and reducing the use of a legally available product traditionally prominently displayed in virtually every neighbourhood corner store.[4]

The rationalities of societal risk management of the hazards of tobacco have very broadly evolved from being primarily moral in both overt purpose and tone (the federal

[4] Nunavut was the first Canadian jurisdiction to ban display of cigarettes at retail in 2004, yet clearly more attention is also needed to address other determinants of smoking (and of health more generally), since current smoking prevalence remains among the highest in the world in this Arctic Territory, at 58% [Canadian Community Health Survey, 2007-2008]. By 2010 all of Canada's 13 subsidiary jurisdictions (provinces & territories) had banned the open display of cigarettes at retail

Tobacco Restraint Act, 1908 sought to protect youth from 'moral delinquency' through fines and confiscation levied against those in possession of cigarettes, in the wake of Parliament's failure between 1904 and 1908 to ban the sale of the then newly introduced manufactured cigarette altogether [Hansard, Canada, 9th and 10th Parliaments]) to primarily medico-scientific (the 1997 *Tobacco Act* , whose legislative purpose alludes to "conclusive evidence" of the medical harms from tobacco [45-46, Elizabeth II, Chapter 13]).

At the same time, programming is shifting from reliance on primarily epidemiological reasoning, paralleling the period when smoking was socially normative or 'mainstream' in Canada (roughly 1950s through 1970s) toward an increasingly clinical, even genetic reasoning, as evolving science suggests that many of the remaining smokers may be characterized as having nicotine- and addiction-specific (i.e., neurochemical) vulnerabilities, as well as lower socio-economic status profiles [Feldman & Bayer, 2004: 303-07]. The emergence of a social gradient in smoking has been accompanied by an intensification of class moralization of the practice, implying 'defective self-care and a lack of cultural sophistication' [Hunt: 1999: 199], including in at least some official governmental pronouncements [see, for example, 'www.stupid.on.ca', aimed at a youth audience].

Modes of Governance

.Looking at tobacco control through the governmentality lens places the focus on the kinds of expert knowledge and regimes of practice that together comprise strategies of intervention to affect tobacco use in the population. The governmentality perspective seeks to make the project of tobacco control intelligible in terms the rationalities, ethics and tools of intervention, as well as the resultant subjectivities of individuals impacted by those interventions. The approach may be relevant for arriving at a critical

consideration of the stated goals of the tobacco control project and its possible longer term outcomes.

Thinking in governance terms opens a space for considering the possible limits of such interventions, as well, because the desired outcomes of policy interventions arise only by way of *governing through* the everyday freedom exercised by the targets of such interventions; namely, the citizen-consumers of advanced liberal society, in whose name the health risks of consumption are managed. "Not only is freedom desirable, it is also an obligation, since it is through the exercise of freedom that individuals not only realize themselves, but also govern themselves" [N. Rose 1999, cited by Reith, 2004].

Most importantly for present purposes, governance brings into play the processes of social denormalization (norm shifting) and the 'externally regulative/ internally constitutive' dimension, 'governmentality', or the conduct of conduct in relation to the subjectivities of the governed. It is not only tobacco that is the object of control – in a sense tobacco is simply the 'site' that defines a rationale for intervention -- it is also the makers, sellers and most significantly for strategies premised on demand reduction, the users (and potential users) who are subjected to varying degrees of 'control'. More accurately, who are subjects of guided self-governance with respect to tobacco and moral regulation with respect to smoking where it can impinge on the freedoms of others.

Projects conducted by way of the "art of government", which is to say by way of an imperative to govern delicately, to govern through and by way of the presumed freedom of the subjects of government (both as citizens and consumers)...[to] govern with a degree of technical precision based on warrantable knowledge, and tending to exhibit an "irreducibly utopian [element]...[implying] that it is possible to re-form human beings, to form or shape them or their attributes in some way, and that our exertions can be effective in this regard" [Dean,1999:33; see also N. Rose, 1999]. Some may term this the triumph of hope over experience. However, the alternative

scenario, in which the subjectivities of human beings cannot be re-shaped, is not consistent with the record of historical and cultural change, and from a public health perspective is viewed as the counsel of despair. The record of projects to educate people and to improve the public's health has largely been one of modernity's successes, with rising life expectancy as its measure, a measure that is only realistic when the 'the smoking effect' is taken into account by demographic analysis [see, for example, Bongarts, 2006].

The rise of risk factor epidemiology in the latter half of the twentieth century has been usefully partitioned in three broad stages of change or reconfigurations of public health biopolitics: an initial focus on de-contextualized, individual behavioural determinants construed in a discourse of "lifestyle choice" (the legacy of the Lalonde report, narrowly interpreted); a shift in focus to underlying social structural determinants (typified by the work of Michael Marmot); and third stage dubbed "pharmaceutical public health" that draws on new genetic insights into the underlying cause of both behaviours and health [Berridge & Loughlin, 2005: 3].

In reality, all three paradigms have their acolytes and shifts of emphasis between the three are more typical than any historical progression, perhaps reflecting on the one hand the relative imperviousness of social determinants to policy-induced change attempts and the uneven progress of medical technologies.

Public health interventions under the rubric of 'population health' are perhaps the exemplary case where 'governing through freedom' makes a virtue out of necessity. The ethical rationale for applying the concept of 'governing through freedom' to public health lies with the so-called 'prevention paradox' [G. Rose, 1993]. Even scientifically warranted health advice offered to an entire population, advice that once adopted by a large number of individuals can shift the behavioural norm of that population, cannot offer much to each individual, as the advice is founded on epidemiological reasoning. Any particular individual in the population, though s/he follows the advice to stop smoking has no guarantee of an improved outcome. Even if the next year does find that

the individual has indeed stop smoking, s/he could also be diagnosed with lung cancer that same year, due to the accumulated risk of years of prior smoking, individual susceptibility factors, etc. In view of the irreducible uncertainties of epidemiological reasoning from the standpoint of the individual, the only biopolitics that is also ethical is that which governs not in the name of the state (eugenics – see Proctor, 1999), but in the potential interest of the liberal citizen, presumed to be free to choose, but also forced to define themselves through those choices. At the same time, however, a strictly individual 'lifestyle' approach to biopolitical / public health projects would merely amount to 'blaming the victim'. Only the addition of regulatory measures aiming to change the collateral social and market factors involved in constraining lifestyle choices allows for the effective governing through freedom in the name of health.

Hunt outlines the main features of governance as: constituting the objects of governance, conferment of powers upon agents, specification of decision procedures, the identification of policy objectives and stipulation of sanctions [1997:117-119]. All these elements are present in state-sponsored tobacco control strategies, directed both to individuals (smokers) and to business entities such as corporations and corner store retailers (suppliers). This multi-level approach to intervention is consistent with Geoffrey Rose's observation that the causes of individual behavior, in this case, smoking, are not the same as the causes of the population *rate of incidence* of the behavior, as the latter reflects broader social forces and conditions of possibility – ranging from marketing activities to socio-economic status and education -- that impinge on the multiplicities of individual motivations and susceptibilities [Rose & Day, 1990; Rose et al, 2008 (1992)].

Citizen/consumers are enjoined to either remain or to become non-smokers, undertakings which imply significant and mindful individual efforts. For example, in relation to youth smoking decisions, whether to resist voluntary dividing or distinction-seeking practices of peer identification in the social process of becoming smoker (or not) -- sometimes framed erroneously in terms of 'peer pressures' -- may be more a

question of social learning, establishing and managing an identity [Eiser & van der Pligt, 1984; Leary et al, 1994; McCracken, 1999]) under the influence of promotional reinforcements (advertisements, promotional incentives). Similarly, smokers are encouraged by health promotion campaigns to commit to a sometimes viscerally challenging process of smoking cessation, now increasingly conceived as a process of overcoming a neurochemical compulsion. Moreover, following Hunt [1997: *loc cit*], governance involves the marginalization of alternative ways of being (also termed "dividing practices" [Foucault in Dreyfus & Rabinow, 1982: 208-10]), a process that is highly visible in the case of smoking, with the re-zoning of public space.

Social "denormalization" is the main mechanism whereby tobacco control's goal of shifting the normative curve of what is considered socially acceptable is ultimately effective in reducing smoking. Even after years of health promotion exhortation and the progressive encroachment on public space of 'no-smoking' restrictions, youth who smoke still believe that smoking is more widespread than is reported by surveys; they also find reassurance that it is still more or less socially acceptable in such observations. The reasons for these perceptions seem to be a combination of the sheer visibility of smoking as a behaviour, smoking's overrepresentation in certain sub-populations (including youth affinity groups) and a normative desire to seek acceptability through selective attention to the social environment [Botvin et al, 1992; Alesci et al, 2003; Unger & Rohrbach, 2004; Sussman et al, 2006; Cunningham & Selby, 2007]. This "false consensus" or "normative fallacy" effect illustrates the centrality of social norm-shifting for tobacco control, since the continuance of smoking in the form of renewal of the market for cigarettes hinges on the normative expectations, attitudes and behaviours of youth.

Health promotion relies on self-governance, but the freedom to resist the message is constrained by the social forces put into play through moralization of the behaviour (see below). Every instrument of policy has its limitations (the most obvious may be that high taxes can induce contraband, which undermines the price effect on consumption)

and the limits of social denormalization can be found in the induction of stigma, particularly when smoking status is combined with pre-existing social marginality:

> "The extent to which the deployment of stigmatization exacerbates already-extant social disparities or has long-term counterproductive consequences for the effort to confront the epidemic of smoking-related morbidity must also be considered...[O]nly when we understand the circumstances under which stigmatization transforms behaviors linked to disease and early death and are able to distinguish these from the circumstances in which stigmatization has negative impacts on public health will it be possible to weigh the competing moral claims of population health and the burdens that policy may impose on the socially vulnerable." [Bayer & Stuber, 2006:50]

"Shifting the Curve" or social denormalization of smoking: A moral force

As Brandt and Rozin noted in their survey of the connections being drawn by public health ideas and practice to morality [1997], "the rapid entry of moral issues into attitudes toward cigarette smoking [in the US] was particularly notable." [vii]. At the same time, they determined that "...the social processes by which moral explanations for health and disease evolve are, to a substantial degree, culturally and historically specific" [viii], so Canada cannot simply be assumed to fit the pattern, although on a *prima facie* basis it would seem that smoking in Canada has been almost as moralized as it has been in the neighbouring United States. Like the US, Canada's dominant political culture is typically described as a form of liberalism, with stronger shadings of a communitarian sensibility ('for the welfare of the community') than the dominant libertarian individualism that characterizes the United States [Seymour Martin Lipset, 1990; Gibbins & Youngman, 1996], with both countries falling within a zone defined by the predominance of the values of 'self-expression' together with increasing reliance on 'individual autonomy' [Inglehart & Welzel: 2005]. The moralization process in Canada may be somewhat softer or more muted by Canada's greater tendency toward moral tolerance [Nevitte: 1996]. Nonetheless, it is arguable that moralizing pressures

have been just as effective as 'dividing practices' (viz., by way of statutes and by-laws dividing smokers from non-smokers) in Canada as it has been elsewhere, including the United States.

Medicine and morals have always been intertwined, so much so that Brandt & Rozin claim that efforts to disentangle them derive from efforts to present a particular moral position [1997: 2], implying that in matters of public health and morality, though the moral bias may be latent, it is inescapable. Alan Hunt captures this with his amalgam, "medico-moral discourse", suggesting a discursive formation aiming to promote a course of action on the basis of both scientific medical knowledge and moral suasion, with particular applicability to the regulatory and governmental self-formation exhortations around tobacco and alcohol use [1999:17, 2003:165-192].

All normative behaviour in social settings is linked to moral feelings to some degree, but behaviours associated with cleanliness, pollution, health and disease are especially imbued with moral meanings [Douglas, 1966, 2002: 44 (interestingly, while she mentioned smoking in passing, Douglas did not link it to pollution or 'dirt'); Rozin, 1999]. Many moral prohibitions are expressed in terms of the emotion of disgust, a powerful motivator for the rejection or avoidance of an activity and one which enables the mobilization of individual moral censure, but also facilitates the involvement of state agencies in the matter [*ibid*, 1999: 218].

The term 'moral regulation' draws analytic attention to the elements involved in the moralization process: a moralized subject (the smoker); a moralized object or target (tobacco products, the practice of smoking); expert knowledge (scientific consensus reports about the harms attributable to smoking and to second-hand smoke); a discourse in which knowledge is given normative content (health promotion campaigns against smoking); a set of practices (methods whereby youth are encouraged to avoid or resist smoking, advice for smokers on the imperative of smoking cessation); and a harm to be avoided or overcome (addiction to tobacco and suffering its consequent chronic disease harms). "Moral discourses seek to act on conduct that is deemed intrinsically bad or

wrong [or harmful]" [Hunt, 1999:6-7]. Most importantly, moral regulation attends to both the external regulation of behaviour and to the internalization dimension, wherein subjectivities are entrained or even 'made up' and persons whose personal conduct is the objective of the regulatory practices, see themselves, and are seen by others, in particular ways in response to persuasive interventions [Hunt, 1999: 7-15; Ruonavaara, 1997].

Mass market cigarette smoking began as a highly controversial, moralized practice, at a time when the aims of the first large-scale anti-smoking movement were related to moralistic perceptions of youthful delinquency and focused specifically on the cigarette, then an innovation [Brandt, 1990; Burnham, 1993; Tate, 1999]. Health was always a factor, though in its proto-scientific form was not distinguishable from the predominant moral discourse of the times [Hilton & Nightingale, 1995; 1998; Rudy, 2005: Ch. on WCTU campaigns in Montreal].

In the more recent period, since the publication of definitive, consensus scientific findings linking cigarette smoking to cancer and other fatal diseases [USSG 1964 and bi-annually since], and especially in innocent third parties subjected to involuntary exposure [1986, 1992; Katz 1997: 307], the practice of smoking has been heavily moralized by way of its entanglement in health concerns, medico-moral discourse in which medical arguments have been the salient factor, the morality more or less implicit. As Katz notes, the expression of moral reproach first requires widespread agreement on what constitutes a transgression [1997:320], an agreement warranted by the scientific findings of the Surgeon General, also highly influential in Canadian tobacco control.

The Canadian situation has been outlined from a political science perspective by Donley Studlar [2002, see 74-81 on political culture] and Constance Nathanson [1999, 2007]: both observers make passing reference to "the moral dimension" (to which the tobacco issue lends itself), but the moralization process is largely interpreted in terms of health advocacy groups, also emphasized by Katz [1997:307-308]. Studlar concluded

that tobacco control is a "blended issue", comprised co-existing elements of "public health, political economy and morality politics, each with different degrees of explanatory power over policy over time" [2008].

Nonetheless, changing behaviour entails changing norms and changing norms entails exerting persuasive pressures, setting good examples and restricting actions thought to be bad and/or unhealthy: in short, moral suasion and moral regulation and more generally, moralization. Rozin defines this term as "the transformation of a morally neutral [or normative] activity into one with significant moral weight…for the purposes of mobilization [viz., of emotional responses around disgust and contamination] and internalization [avoidance of smoking and acceptance of new, health-based values]" [Brandt & Rozin, 1997:379-401]. In fact, cigarette smoking had never been truly 'morally neutral', but had always attracted a measure of moral disapproval from the time of the introduction of the cigarette as a 'novel' nicotine delivery device [Hilton & Nightingale,1998; Hansard, Canadian Parliament, 1904-1908 (cigarette debates)].

These two processes – moralization and moral regulation – are worth distinguishing for some purposes: the former emphasizes the psychological, while latter the sociological, and thus a richer context for making the link to governmentality. Hunt notes that "moral regulation comprises moralization rather than morality" [1999:8], but moral regulation draws attention to the "interconnected web of discourses, symbols and practices" linking some forms of conduct to harms [*loc cit*: 7] and the "ongoing contestations that involve a continuous, and more or less coercive, suppression of some identities and forms of life (eg., the dividing practice of setting smoking and smokers aside from certain public places) and the encouragement and enhancement of preferred forms (viz., being or becoming a non-smoker)" [*loc cit*:15].

Considering both Canada and the US (as well as other advanced liberal democracies like Australia [see, for example, Hooker & Chapman, 2007: 125]), the socio-cultural and moral advocacy trend against smoking partakes of all nine of the factors that Rozin identified for the effective operation of moralization. These include knowledge, advice

and legal/regulatory strictures, all of them relevant to the medico-moral discursive formation that the governmentality writing of Foucault and Hunt's work on moral regulation of everyday life draws our attention to: (i) the centrality of an assumed individual capacity for self-control and self-discipline as a prevalent cultural norm [Wouters: 2007]; (ii) the presence of innocent victims (adults involuntarily exposed to others' cigarette smoke, harm to children and the fetus) [USSG 1986, EPA 1992]; (iii) stigmatized and marginal social groups (both smokers themselves, although comprising at the beginning of the modern anti-smoking trend a majority of Canadians, now an increasingly beleaguered minority, as well as being over-represented amongst First Nations communities and 'income inadequacy' social groups [HC/First Nations, Inuit & Aboriginal Health/Facts on Smoking; Mao et al, 2001; Lee et al, 2009; Reid et al, 2010]); (iv) fit within existing predispositions (viz., 'informalization' cited above, the secular trend in healthism, widespread preoccupation with health status as life expectancy lengthened and society became wealthier [Crawford, 1980], the expansion of the mass media); (v) favourable short-term cost/benefit ratio (the ubiquity of smoking's interpenetration of other social practices and settings was a hurdle for anti-smoking, but once smoking began to decline and to be perceived as a minority activity, acting against smoking became increasingly 'cost-free'); (vi) "accretion of reasons" (Rozin singles out smoking as a classic case where motives for disparaging smoking and smokers tend to multiply [395]); (vii) vulnerable periods or "windows of moralization susceptibility" [395] (post-Medicare adoption in Canada and the coming of age of the baby-boom demographic; pre-health insurance 'nationalization' anticipation in the US [Katz: 325]); (viii) lack of full understanding of disease causation (Rozin cites chronic diseases, several of which are strongly linked to smoking, as a "complex domain of multiple causes...where lifestyle can easily be invoked as a contributor to causation" [396]; moreover, the epidemiology of chronic disease was itself developed around the smoking issue, in contestation with both different biomedical perspectives and tobacco industry obfuscation by way of the "manufacturing of doubt" [Doll 1998 a,b; Parascandola, 2004 a,b; Berlivet, 2005; Brandt, 2007]; and last, though surely not least (ix) the rise of "secular morality" with its receptivity to epidemiological reasoning, scientific or at least scientistic attributions

for illness and accidents, secular "salvation" by way of health & fitness [see also Glassner, 1989] and for which attitudes against smoking are offered as the prime example [Katz in Brandt & Rozin, 1997: 297-330].

In all these ways, then, as well as others -- its very visibility, for example, and the annoyance factor even before second-hand smoke was construed as a hazard -- the cigarette would appear to be the epitome as a focus for moralization [Rozin 1999: 218] and moral regulation [Hunt, 1999:196-200] in the deployment of tobacco control. These forces may have been largely latent, but became mobilized in the course of the evolution of public health practice, or what is here termed governmentalized biopolitics. The so-called 'social denormalization' of smoking has been as central as high cigarette taxation to the successes of tobacco control, so much so that a "social unacceptability index" was proposed as a standard for estimating the effectiveness of tobacco control [Alamar & Glantz, 2006].

So far has the curve of normality and social acceptance of smoking been shifted by way of the intense moralization of tobacco consumption, that questions have increasingly arisen in recent years whether tobacco and nicotine may be close to an "boundary reallocation" [Berridge, 2002: 14; Huisman et al, 2007], possibly a shift towards illicit status, having been both vilified and controlled into a zone of pathology, where the social image of the people most likely to use tobacco has been down-scaled to marginality.

Applied to the influential health promotion theory of Geoffrey Rose, moralization and moral regulation can be seen as the means for achieving the changes of behaviour believed to be congruent with the health goals of policy.

> "[A] population strategy of prevention is necessary where [the source of] risk is widely diffused through the whole population…[even though] a preventive measure that brings large benefits to the community offers little to each participating individual [known as 'the prevention paradox']...[I]t makes little

> sense to expect individuals to behave differently from their peers; it is more appropriate to seek a general change in behavioural norms and in the circumstances which facilitate their adoption" [G. Rose, 1992: 135].

Although Rose used the language of social norm rather than 'moralization', achieving behavioural norm change is an inherently moral project, which in the case of smoking would seem to have been highly successful. Recent proposed extensions of the boundary of dividing practices between smokers and everyone else have included restricting smoking in private automobiles when children are present. In 2009 five provinces adopted statutes prohibiting smoking in cars with kids: ON, MB, NB, PEI, BC. And the other provinces are considering doing the same. Going still further, some are considering making city parks 'non-smoking' out-of-doors [Red Deer AB Advocate reporting favourably on a by-law adopted in Tofino, BC, March 30, 2010].

The question that must be asked at this stage of the tobacco control project is whether moralization, moral regulation and the unavoidable stigma that accompanies it will prove equally motivating across all socio-economic, culturally distinct and socially marginalized groups where the prevalence of smoking is expected to be increasingly concentrated over time. The answer that health promotion offers is that knowledge and action relating to giving up smoking has proven to be a moving target, in that while a gradient in education relative to smoking status persists, over time its absolute size shrinks: the smoking rates found today among people with lower educational achievement are similar to those found among those more highly educated a decade or two previously [Link, 2008:378]. In other words, a latency effect is proposed, where risk knowledge and related action to maintain health (whether not taking up smoking or smoking cessation) eventually permeates all social groups. But the stubborn fact that higher smoking rates and associated attitudes toward smoking, together with a degree of fatalism towards health in general, persist among lower socio-economic and socially marginalized groups implies limits to the usefulness of moralization and stigma. Moreover, discriminatory attitudes towards smokers from the medical profession

suggest that the social denormalization of smoking extends to smokers whose health risks and conditions are seen as self-inflicted [Bell et al, 2010].

If it is generally true that these smokers tend to internalize stigma rather than challenge it or change their behaviour to avoid it [Farrimond & Joffe, 2006:489], then shifting the curve may have reached its limits at the point where it becomes counterproductive as a tool to engage self-governance for health.

Permutations of Guided Freedom: Coercive Permissiveness, Consensual Coercion & Permissive Consensus

Virginia Berridge characterizes the tension between two broad approaches to public health policy, for which she designates smoking as the "tracer policy" [2007: 1] as a historic shift in styles of governance. 'Systematic gradualism', comprised in the UK of a government-(tobacco) industry alliance and efforts at harm reduction, gave way to 'coercive permissiveness'. With respect to the smoking issue, the former approach typifies the period 1945 – 1995 in Britain (approx. 1965 – 1985 in Canada, although the term 'alliance' is far more apt in the UK where a formal negotiated agreement with the industry was in place), while the latter describes the more recent period in both countries, here designated as 'tobacco control'.

As the social acceptance of smoking began to wane in response to the heightened salience of the risks of what had long been socially ubiquitous, the new public health advocacy movement, in alliance with governments, shifted towards the deployment of public policy strategies that combined regulatory, health promotion and social marketing elements [Nathanson, 2007]. 'Coercive permissiveness', the suggestive term Berridge supplies for this new phase, "argued for individual self-determination [i.e., with respect to health matters], but within a framework of behaviour increasingly defined by the state" [2007: 2-3]. Governments, in conjunction with state-sponsored advocacy coalitions that were ostensibly 'non-governmental', but in fact could garner little concrete public support and relied on funding from the state [Berridge, 2005:106-

07 on the origins in 1971 of Action on Smoking & Health, ASH; again the Canadian case differs somewhat, in that NGOs are funded through 'grants & contributions', premised on their having greater independence of action], defined a new role for themselves... in the regulation of healthy behaviour...[a]dvising on and regulating the individual health behaviour of the electorate. [Berridge, 2007:*loc cit*].

Smoking was not at first considered a candidate for public health intervention, in part on a gender basis: "health advice about individual behavioural modification...had usually been aimed at women and children rather than at men, yet the latter formed the majority of smokers in the 1950s" [Berrridge 2003:66-67]. This observation of the British situation is also applicable to the Canada of the same era, when the majority of men, but a only a minority of women were smokers [The earliest national Canadian sounding, the Labour Force Survey 1966 found that 53% males and 32% females smoked]. Ironically, the representation of smoking's innocent victims – non-smokers involuntarily exposed, especially children – later played a key part as moral underpinnings for tobacco control's purification of public space.[5]

The new approaches to public health that emerged in the 1970s (signalled in Canada by the 1974 Lalonde Report) "argued for a focus on the whole population, while at the same time stressing the role of individual responsibility" [Berridge 2005:23]. In effect, health-relevant personal behaviour and the prevention of the associated risks became "everybody's business" [Berridge & Loughlin, 2005: 3] , even as the individual was interpellated to change her/his lifestyle by overcoming "self-imposed risks" [Lalonde, 1974:16].

In the idiom of Foucault's 'governmentality', coercive permissiveness can be seen as the embodiment of 'governing others/ governing ourselves': a prime exhibit of modern liberal governance by way of which citizen-consumers are governed through their very freedom [Dean, 1999; N. Rose, 1999: 137-159]. The logic is one of

[5] Arguably tobacco control's greatest success was the truncation of female smoking rates at levels much lower than the maximum prevalence of risk exposure experienced by males.

prevention, of inciting the development of prudential consumer/citizens in the avoidance of epidemiological risk through inculcation of practices of the self [Dean 1999: 189-191]: smoking is cast as not only an unhealthy but an immoral 'choice', although the extent of the freedom to choose is what is at stake the further such moralization progresses. Tobacco control entails elements of moral regulation epitomized by smoking restrictions and tobacco taxation policies which function as "compulsions to virtue" [Hunt, 1999]. "Projects [that] involve the formation of ethical subjectivity...[inciting] those at whom it is directed to engage in practices of self-formation" [1997: 281; see also Hunt, 1999: 7-15], involve moral regulation characterized by "consensual coercion" [ibid, 1997: 289] for which a degree of prior consent is achieved through the dissemination of expert discourses on such matters as the risks of second-hand smoke and the price-elasticity of tax on cigarette consumption, especially in the case of youth ["Second-hand Smoke Sickness", HC campaign poster 2006; Townsend, 1998 ; Galbraith & Kaiserman, 1997; Chaloupka & Warner, 1999].

There is an elitist aspect associated with this process of moral regulation as governmentality, even (perhaps especially) when it entails the broader, coordinated actions typical of Government-NGO partnerships. This is the notion of 'permissive consensus'. Studlar [2002] invokes this notion to describe the 'policy type' of tobacco control, for which there is "neither great public demand...nor much resistance to it" other than from vested interests. Acknowledging the centrality to tobacco control of smoking restrictions, Leiss referred to their adoption as a process of "elite mobilization" [2001: *loc cit*]. "Public opinion has shown a widespread willingness to accept greater government regulation of tobacco, usually including increased taxes...even if most people are not intensely interested in the issue. Tobacco control as a policy issue engages [only] what might be termed the 'attentive public'...[primarily] public health practitioners and anti-smoking activists" [171]. In this respect, too, tobacco control contains elements of moral regulation, but does not constitute what is sometimes termed the 'morality politics' of so-called 'wedge issues' [Tatlovitch & Daynes (eds) 1998, 2005]. In terms of governance, the combined effects of 'coercive permissiveness' and 'consensual coercion' (relative to the subjectivity of the citizen

interpellated as a smoker), together with a 'permissive consensus' towards policy (relating to an open-ended, though not unlimited, acceptance of at times intrusive measures aimed at minimizing or eliminating a health 'evil') describe a process of the moralization of smoking, "broadly configured [as the deployment of] moral norms as a critical spur to health promotion and disease prevention…a process by which morals 'construct' health [Brandt & Rozin, 1997: viii]. Population health may be an ultimate outcome of such measures, but in the shorter time horizon of governmentality, the outcome is in the form of changes in behaviour whereby the values imputed in health promotion messages entrain the ethical subjectivity of smokers and non-smokers alike.

> "Drawing on chronic disease epidemiology and increasingly on mass psychology, [the new public health] emphasized economic factors, and the role of higher taxation as regulatory mechanism. The role of the mass media through mass advertising was central; advertising was either to be restricted or used as a public health tactic. It was part of a public health agenda which stressed both individual responsibility and the culpability of industrial interests. This template was to be applied in many areas – diet and heart disease was another – and smoking provided the blueprint." [Berridge 2007:132]

Intractability, 'perpetual failure' & re-incitement

In what sense could a public health project as important as official policies mounted against what is invariably described as a highly successful intervention against the largest single cause of premature mortality in industrial societies - an allegedly *preventable* source of legally available harm, at that – be characterized as 'perpetually failing'? Isn't this just the self-interested propaganda of the tobacco companies speaking? The governmentality approach may offer a way of stepping back from the heroic assumptions so characteristic of the anti-smoking debate, opening up a space for the consideration of less utopian approaches to reaching the overarching harm reduction goals of tobacco control; namely, "reducing the disease and premature deaths attributable to tobacco use" [FTCS announcement, Health Canada, April 3, 2001].

Despite the evidence to date of changes of consumption attributed to population level interventions, the 'bio-project' undertaken by Governments can also be described as 'perpetually failing', in the sense that falling short of their goals always serves as an incitement to the furtherance of revised interventions. In the words of Nikolas Rose, "if government is a perpetually failing activity, the will to govern is eternally optimistic" [1994:378]. In tobacco control policy, total abstinence is the goal: "don't start, quit". Abstinence as an aspirational goal in the problematization of substances, beginning with alcohol, grew from anti-elitist religious convictions about the perfectibility of everyman [Warner, 2010]. The underlying principle of abstinence, that "the only safe response to risk is to eliminate it" [*ibid*, xi] (or "just say no") has an obvious appeal to anti-smoking advocacy, which has expanded the concern to first second-hand and then third-hand smoke. That no amount of exposure is safe, however, also has a latent appeal within the politics of a state-sponsored or governmentalized program to control tobacco, since it implies that the identified problem is eventually susceptible to a complete resolution. All that is required is persistence of intervention, redoubled efforts on the part of complex coalitions of state agencies, civil society groups, experts and of course, individual smokers. A contemporary civil society example may be seen in a newsletter dated November 2006 from the NGO Physicians for a Smoke-Free Canada, titled "The job is not yet done: Falling smoking rates…create new challenges".

From the perspective offered by the analytics of governmentality [Hunt, 1993:29; Dean, 1999:9-39], namely, knowledges (*sic*), routines, regimes of practice and technologies pertaining to governing or governance conceived as 'the conduct of conduct', policies designed to effect the health of populations 'fail' perpetually in a particular sense that it incites continuously renewed efforts to achieve policy goals. 'Failure' in this account occurs despite degrees of success, and amounts to no more than an acknowledgement of the intrinsic constraints entailed by the governance of liberal subjects, citizens obliged by the necessity of choosing to constitute themselves as 'free'. (Over a longer time-frame, even the neurochemically constituted nicotine addict may be seen as 'free' in the sense that his/her consumption of nicotine could be less governed externally in

future, despite the fact of his/her neurochemical selfhood internally comprising a form of subjective unfreedom (a topic to be taken up in Part III).

Perpetual incitement to renew efforts that fall short of the goals acknowledges the irreducibly utopian aspect of projects deployed through the arts of government: "Even in its apparently most bureaucratic and managerial, or its most market-inspired, government is a fundamentally utopian activity...that we can draw upon and apply forms of knowledge…to make things better" [Dean, 1999:33]. Biopolitical efforts to put into place tobacco regulatory policies and programs are invariably cast in terms of idealistic and even millenarian rhetoric: the "smoke-free society", "smoke free by the year 2000" [Koop, 1986], "banishing tobacco" [Chandler, 1986],"growing up tobacco free" [Lynch & Bonnie,1994], and, increasingly, "a tobacco-free society" [Research Institute for a Tobacco Free Society (Ireland); WHO/Tobacco Free Initiative].

The counter attack from vested tobacco interests, when not merely evasive, can be as resolutely fatalistic about such prospects as anti-smoking zealots are hopeful. Tobacco multinational Philip Morris once advised the government of the Czech Republic not to pass a tobacco ad ban, since smokers saved society money by dying before collecting their pensions (not that smoking was actually acknowledged to have caused their deaths). This unwelcome truth, put into the service of vested interest, quickly became a public relations fiasco that called forth a corporate apology [Ross, 2004].

Shorn of its self-interested bad faith, however, a version of the non-utopian view may be the antidote to perpetual failure and the costs of unending intervention aiming to achieve some elusive final victory over the tobacco problem. Acknowledgement of inescapable limits, a task facilitated by a governmentality perspective, can contribute to re-thinking the issues at stake, "to think otherwise", to strip away the taken-for-granted character of how things are done and to thereby "enhance the human capacity for the reflective practice of liberty [Dean, 1999: 38-39].

In terms of the rationalities of intervention, an important question arises concerning the ultimate objective of controlling -- by which is always implied in policy terms as 'reducing' -- tobacco use in society and influencing personal tobacco-related behavior (for the greatest part 'smoking') by citizen-consumers. Could this ongoing project of governing, in which a social advocacy movement is allied to a comprehensive set of state-sponsored programs of interventions aimed at tobacco products, their users and the social and market environment of their use, be pursued to a point beyond the social banishment of smoking to the virtual elimination of tobacco? Put another way, could an effective, but nonetheless 'perpetually failing' project finally succeed in bringing about the total abolition of the problem it has identified?

The Commonwealth government of Australia, whose smoking rates are comparable to Canada's, has a notional goal of reaching a national 'tobacco free' status by about 2030. Mike Daube, a veteran anti-tobacco campaigner from Western Australia, is one of the few from the NGO community to have gone on the record to the effect that the goal of the movement (and governments) should be to "ban cigarettes altogether by 2050" and phase out the tobacco industry [Daube, March 24, 2010, Curtin University web site]. Richard Daynard, director of a major anti-tobacco industry litigation project at North Western University, has called for tobacco to treated as an illicit drug [2009].

Gartner, Barendredgt & Hall [2009] analyzed smoking trends for Australia and concluded that cessation rates, notoriously slow everywhere, would have to double to reach a policy goal of 10% prevalence by 2020. The Royal College of Physicians in the UK proposed that Britain aim to 'eradicate smoking" by between 2020 and 2030, while the British Medical Association advises the government to aim for a "tobacco-free UK" by 2035 [UKDH, Consultation Report on the Future of Tobacco Control, December, 2008]. Britain's current smoking prevalence, once the world's highest, is now almost as low as Canada's at 21% in 2007 [NHS InfoCentre, 2009].

At least one of the NGOs allied to Canada's tobacco strategy, Physicians for Smoke-Free Canada, projects a straight line decline in tobacco consumption from 2008 ("4.6

million smokers") to the year 2031 (targeting for there to remain in Canada only ~200,000 smokers or less than 5% of the absolute number of smokers estimated for 2008) by way of a "*Phasing Out Tobacco Act*" [PS-FC, February 2008]. This would imply that, net, by legislative fiat, about 220,000 smokers could be persuaded to quit smoking (or, unfortunately, die due to their smoking) every year for the next 20 years.

The plausibility of this future projection may be gauged by looking back at the recent historical record from national survey data, which show the absolute number of smokers in Canada as having dropped from about 5.4 million in 2001 [CTUMS, 2001: 'gosmokefree.ca'] to about 5.165 million in 2007 [PS-FC, Dec.2008]. This suggests that the absolute number of smokers in Canada is decreasing very slowly, perhaps by 4.6% over 5 years, or by <1% point annually. However, this decline has not been a steady one: the estimated number of smokers began to increase between 2005 and 2007, in part due to the rise of contraband cigarettes.

Canada's average national smoking prevalence (i.e., the survey estimated proportion of the population that reports smoking daily or occasionally) has stalled at 18-19% since 2004/2005 [CTUMS surveys available @ 'gosmokefree.ca'. Since 2004, the estimated average national smoking prevalence has been: 19.6 (20%), 18.7, 18.6 and 19.2]. In 2008, it had reached 18%, including 14% daily and 4% 'occasional' smokers and by 2009 between 17 and 18% [CTUMS – HC website 'Health Concerns']. Reducing prevalence can be affected by non-tobacco control factors such as denominator dilution, whereby for reasons unrelated to policy the proportion of non-smokers increases, while that of smokers may remain unchanged. Reducing the absolute number of smokers, however, is much harder, since that can only happen by way of effective interventions influencing the likelihood of becoming or remaining a smoker. Since prevalence has not changed significantly in recent years, dilution of the denominator is likely not a factor, as it was to some extent in California [Warner et al, 2008]. Instead, the relative stasis in the vicinity of 17.5% current smoking could be because of reduced policy effectiveness from a number of causes, including in particular contraband supplies, which undermine the powerful tax/price element of tobacco control strategies [Canada,

Minister of Public Safety/RCMP, July, 2009; Merriman, World Bank (Undated)]. Contraband cigarettes constituted about 30-40% of the two largest Canadian tobacco products markets, Quebec and Ontario, as of 2010 [Canada, *op cit*].

Even if contraband is eventually brought under control, a difficult prospect in itself now that it has become structurally embedded within some major First Nations Territories [Canada, 2009, *loc cit*] tobacco use is unlikely to diminish steadily downwards to near zero, in line with the hopeful projections of advocates and the aspirational goals of governments. For one thing, the evidence adduced above suggests that a point of diminishing returns is more likely, with big gains becoming increasingly difficult to achieve, possibly because a greater proportion of the remaining smokers may be or become "persistent" or "harder core" [Rutherford et al, 2007] or due to the effects of social determinants of health, increasingly "harder to reach" with both health advice and concrete everyday supports for a achieving the healthier non-smoking lifestyle to which at least some lower income smokers aspire, but have difficulty sustaining [NCIC/HC 1996:15; Britton, BBC:2004 and Royal College of Physicians: 2007].[6] A report on perceptions of smoking cessation in Britain found that there was "no culture of quitting" in deprived or marginalized communities, that "quitting is associated with pain (cravings, anxiety, stress) and loss of one of life's few pleasures, with nothing left to fill the void...[Q]uitting is rarely planned and is generally short-lived, although (like cutting down) short-term quitting is perceived as successful cessation" [Jackson & Prebble, 2002: 8. Minian et al, OTRU, March 2010 may be the closest equivalent to this available in Canada].

---

[6] Rutherford et al based their estimate on a report for Health Canada by Millward Brown consultants (March, 2007, HC-POR-06-744/Project #20209497) who define the persistent smoker as older than age 25, must have smoked for at least 5 years, currently a 'daily smoker', smokes at least 15 cigarettes daily, no quit attempts lasting 24 hrs within past year and no intention of quitting in next 6 months. Evidently, how 'hard-core' is defined will greatly affect any estimates. Some estimates include measures of addiction, such as 'smokes first cigarette within 30 minutes of waking' etc. An American study also found that between 14% and 18% of smokers are hardcore [Augustin & Marcus, 2004]. In a UK study, which similarly estimated a 'hard core' figure of about 16%, Jarvis et al also claimed that "the proportion of hardcore smokers does not necessarily increase as overall prevalence in a population declines"[2003]. Future prospects of reducing tobacco use much further may well hinge on the reliability of this observation.

In any case, despite the limited impact of efforts to date to enhance cessation, future Canadian tobacco consumption levels would seem likely to remain considerably lower than those typical of the mid- and late twentieth century, due in part to tobacco control measures that have been effective in shifting the population health norm towards non-smoking [Chaiton et al, 2008] and in part to a concurrent secular trend of 'healthism', the individually oriented medicalization of aspects of everyday life [Crawford, 1980]. It could even be argued that the growing imperative felt by people to actively be healthy and maintain healthfulness [Lupton, 1995] is both a backdrop to, and a consequence of, the increasing number and intensity of governmentalized projects aiming to enhance health and manage health risks deriving from consumer products and everyday activities: tobacco, alcohol, drugs, fast foods, salt, etc., projects that are not entirely individual in their orientation: tobacco control, for example, entails regulation of the tobacco industry's promotion [*Tobacco Act*, 1997].

Another trend that could reduce tobacco use, although not necessarily health impacts related to smoke, involves cannabis: some recent studies indicate higher cannabis than tobacco use among some youth populations in Canada [Leatherdale et al, 2006], suggesting the possibility of a displacement of smoking habits between one legally available substance whose use has been culturally denormalized and another whose acquisition has always been illicit, but whose use is gradually becoming normalized through changing risk perceptions. In effect, tobacco and cannabis are invited to 'trade places', presumably the former becoming illegal while the latter is decriminalized or even legalized. Interestingly, the investigation into lower income smoking is Britain found that widespread cannabis use by men was another reason why quitting tobacco smoking was seen as difficult, since both were synergistic coping mechanisms in their marginalized way of life [Jackson & Prebble, 2002: *op cit*]. In Canada, strong interactions have also been noted between the smoking of tobacco and marijuana, especially amongst youth [*ibid,* 2006], so it is not yet clear what effect the trends in youthful cannabis use may have on remaining tobacco smoking.

Even if tobacco use is conceived in more morally neutral terms as a problem of 'substance use', rather than its traditional label as a 'vice', and thus more amenable to modern scientifically informed public health interventions deployed to encourage people's capacities for eschewing smoking, tobacco use could still be expected to continue in perpetuity, just as the use of substances whose supply has long been illicit in Canada and elsewhere has not disappeared, instead having become chronic social problems that can be managed, but not eliminated.

In view of the emerging understanding of the role played by social determinants in constraining health-related behaviours, including tobacco use and addiction, as well as the interplay of tobacco use and other, health-related behaviours (cannabis use, fast food snacking, binge drinking) the notion that there would eventually be some final or conclusive victory over the tobacco problem -- that is to say "virtual elimination" -- does not appear to be a likely prospect. Efforts to cast tobacco control as responding to the "contribution smoking makes to health inequalities" (key elements of the strategies in Australia and New Zealand [See their respective national strategies for 2004-2009: 'www.health.gov.au' and 'www.moh.govt.nz']) may be hopeful efforts, but they may also underestimate the effects of socio-economic and socio-cultural determinants on the persistence of smoking. In other words, the arrow of causation is conveniently reversed in the hope that tobacco control can penetrate past the barriers of social marginalization as an independent force to eliminate the proportion of health inequalities that are said to be attributable to smoking.

Finally, it will be argued below that another key factor in tobacco's persistence is the current paradigm of nicotine addiction which identifies nicotine 'susceptibles' through genetic predispositions.) The perspective by which the current neurochemical brain disease paradigm of addiction constructs the 'nicotine addict' implies certain relations of tobacco user governmentality and subjectivity which may be more amenable to so-called 'high-risk interventions' [Rose 1993]. A related possibility is that the logic of tobacco harm reduction may eventually come to govern at least a sub-set of tobacco users, possibly even displacing the dominant notion of progressive tobacco reduction.

Specifying the risk (through which smoking is governed)

Risk and its management have come to be seen as an indispensable technique of government, including practices of self-governance [Garland, 2003; Hunt, 2003]. Risks, unlike dangers or hazards, are socially constructed and do not exist outside of our knowledge of them: while there can be unforeseen hazards, there are no unforeseen risks [Garland, 2003:52]. The foreseeability of a risk depends crucially, then, upon an individual's information about the nature of a hazard and some assessment of its personal relevance. Conduct-related risks such as those involved in smoking are no exception, even though they have at times been too glibly framed as 'lifestyle choices'.

Smoking is usually characterized as a risky *health* behaviour, but the adverse health impacts relevant to tobacco use involve long-delayed chronic diseases that typically follow decades of daily smoking [McGinnis & Foege, 1993; Mokdad et al, 2004]. These disease outcomes may more usefully be thought of as second order risks, knowable as abstractions, but not constituting actionable knowledge in and of themselves. They are risks that must be taken on faith, risks that derive from the first order risk of becoming dependent upon smoking, increasingly framed in a discourse of addiction. Dependence upon smoking as a mode of self-management is a more immediate risk than the health *sequellae* of extended reliance on smoking; however, like those health risks, addiction too is an unactionable abstraction for novice smokers who take the autonomy of their own choices for granted [Weinstein, 1998; McCracken 1999]. The very notion of changeable health behaviour so crucial to all health promotion/ biopolitical projects is of relatively recent vintage [Armstrong, 2009]. But a further twist of the genealogical account is required to bring into focus the further notion that health behaviour may not after all be so changeable, that the 'risk-avoiding individual" [Berridge, 2003: 73] may be highly resistant to change, not simply due to an aversive reaction to advice or nagging, but due to dependence/addiction.

The critical linkages between risk and responsibilization in the smoking avoidance discourses permeating everyday life as a consequence of the tobacco control project are

increasingly made by reference to the addiction concept. How we think about the constitution of addiction and its related subjectivities will be critical then to the credibility to be accorded to claims of blame and victimhood [see Hunt, 2003: 183-186 for an approach based implicitly on the primacy of health risks as distinct from addiction risk].

In a further complication, renewed interest in the genetic basis of addiction has emerged as the most recent phase of the genealogy of the addiction concept, now cast in non-essentialist, more fluid terms as gene-environment interaction [Shea 2009; Marcus, 2009]. Tobacco control to date has primarily been a narrative of modifications to the social environment and the shaping of social norms. However, the geneticization of nicotine addiction brings a new dimension into view, signaling both a change in direction towards the treatment of high risk populations and a sense of limits to the ultimate outcome of the tobacco control project.

Like risk itself, addiction has been socially constructed and again like risk, it is real in its consequences. Moreover, the modernized version, brain system-mediated nicotine addiction, provides the critical governmentality linkage that explicates the shift in modes of public health governance from denormalization (the population approach wherein the normative curve of social acceptability is shifted) to the 'high-risk' or targeted approach premised on evolving concepts of individual genetic susceptibility.

In relation to these changing regimes of governance, the emerging paradigm ('genetic neurochemical nicotine selfhood') is in tension with the regime of practices that constitutes the tobacco control project. Tobacco (or more properly nicotine as its main psychoactive component) has unique features amongst available psychoactive substances, a fact that is seldom noted in the vast outpouring of reports and analysis that problematize tobacco use. This, in turn, has implications that potentially problematize tobacco *control* as a form of governmentality.

The 'conduct of conduct' offers a broad, analytical perspective on issues of the government of human behavior across multiple, intersecting contexts, by a range of authorities and agencies, invoking particular forms of truth and deploying specific resources and techniques [Dean, 1999: 3]. One of the governing truths of modern tobacco control is the addictiveness of the cigarette and its constituent, nicotine, but the concept of addiction itself has undergone a number of interesting historical shifts, both with respect to other drugs and more recently with respect to nicotine. It may be that nicotine, in fact provides the paradigmatic example of an addictive substance, paradoxically because it does not conform in certain respects to the inventory of criteria adopted for determining if a substance counts as 'addictive'.

PART II: The Significance of Addiction

'Making Up' the Nicotine Addict

This paper is primarily concerned with outlining the limits of the tobacco control project, which depends heavily on the social denormalization of smoking. Two of the most important of the limiting factors relate to characteristics of the population target of health promotion discourses, characteristics that may overlap, but are conceptually distinct: vulnerable populations and populations at risk. One of the latter group includes persons construed as "nicotine addicts", constructed by the current addiction paradigm (see below) as biologically inscribed with a predisposition to become dependent on tobacco.

The former refers to groups who due to shared social characteristics are at "higher risk of risks" [Frohlich & Potvin, 2008; Lynch, Kaplan & Salonen, 1997]. These groups are characterized by socio-economic or socio-cultural vulnerabilities that act as "fundamental causes" of disease by influencing or reinforcing the distribution of disease risks [Link & Phelan, 1995].[7] Importantly, in view of the ambitions of modern health promotion biopolitics, the very dividing practices and normative changes induced to control tobacco have in themselves contributed to concentrating health inequalities because tobacco control policies, which are founded on notions of the presumed effectiveness of individual agency, cannot affect underlying or more fundamental structural forces [Frohlich & Potvin, 2008; Phelan & Link, 2005].[8]

The second distinction, "populations at risk", refers to groups (who overlap with vulnerable groups characterized by social factors) characterized by higher exposure to a

---

[7] Some social epidemiologists see the very existence of social hierarchy as a fundamental cause of disease in itself [Wilkinson, 1996, Hertzman, 2001; Marmot, 2004]

[8] Debate continues on this point: see International Journal of Epidemiology 39, April 2010: 372-379 papers by McLaren et al and reply by Frohlich & Potvin. The Task Force on Health Disparities Discussion Paper positioned the widening gap due to partially effective behavioural change policies as 'temporary', potentially remediable by "targeted and tailored" interventions [2005: 9 *et passim*].

specific risk factor; in particular, a biologically based risk factor as originally envisioned in the social intervention epidemiology of Geoffrey Rose.[9]

Social risk factors for smoking are characteristics of individuals that influence or reinforce the likelihood of trying smoking and of continuing to smoke long enough for dependence to develop. Biological risk factors found in populations 'at risk' could be conceptualized as individual traits that made the likelihood of trying smoking (viz., theories of "sensation-seeking" or psychopathological personalities etc [Gilbert, 1995; Clayton et al, 2007]) or of becoming dependent on smoking, more likely.

It is the latter of these traits that has gradually come to dominate expert views on the persistence of smoking. Variously described as persistent, recalcitrant, intractable or even "hard-core", smokers who do not engage with smoking cessation are increasingly reconfigured as "nicotine addicts".

"The most addictive drug"

Perhaps the classic modern statement of the unique attributes of nicotine addiction and of tobacco smoking is Thomas Schelling's brief commentary in *Science* in 1992, 'Addictive drugs: The cigarette experience', in which he asks a very pertinent question: "how does nicotine compare to other drugs?"

Prior to the spread of smoking restrictions, Schelling notes that tobacco smoking was characterized by an "almost universal [social] compatibility" [431]: [Note that this statement can only refer to a specific historical period, between approx 1930, with the ebb tide of cigarette bans dating from the turn of the century and 1980, after which came the rip tide of smoking regulation.]

---

[9] This critical distinction together with useful graphical models of the 'health inequality effect of public health interventions' is described in Frohlich & Potvin (2008), one of the most important brief interventions in the public health literature in some years A sociologically informed explanation of the interactions between individual susceptibility factors and population level interventions – one that implies that "success' in public health endeavours depends finally on changing the underlying conditions of vulnerability that allow "susceptibility" to be expressed -- can be found in Schwartz & Diez-Rous, 2001: 435-39, especially at 436].

> "There is almost no moment in a former smoker's life when a cigarette would not have been appropriate, and the former smoker's day is full of occasions and activities that would once have prompted a cigarette and still may prompt the thought of one…Cigarettes produce no impairment of any faculty…no intoxication." [1992]

Schelling had just ended a stint as Director of the Institute for the Study of Smoking Behavior and Policy at Harvard's JFK School of Government when he rated cigarettes as "extremely addictive" [*loc cit*]. Kozlowski et al [JAMA, 1989] probed the subjective impressions of a small sample of persons in treatment for alcohol and drug dependence on the relative difficulty of quitting smoking versus quitting use of the drug for which they were seeking treatment. More than half rated their urges to use cigarettes as comparable to, or stronger than, other drugs or alcohol, but also as 'less pleasurable'.

But it should not be inferred that nicotine has no euphoriant effect. According to the Pomerleaus "Inhaled nicotine in cigarette smoke provides [effectively] an instant response – 10 seconds or less to reach the brain – and a very brief "high"[Pomerleau & Pomerleau,1992, 1994]. Moreover, and perhaps unsurprisingly (though it is not acknowledged in health promotion messages), those who report that their initial experiences with cigarettes are pleasurable are more likely to become regular smokers [Pomerleau et al, 1993; JR Hughes 2001]. Unlike any other addictive or psychoactive substance, cigarettes have a pleasurable effect that last no longer than the lighted cigarette. The recycle time is short, less than an hour on average." [Schelling: 431], the 'high' or 'buzz' most noted with the first cigarette of the day when nicotine's fast-acting tolerance has partly worn off over night.

In "Smoking: The Artificial Passion", David Krogh noted that the typical pack-a-day smoker's 70,000 'hits' of nicotine drug effect annually, are all closely imbricated with the banal desiderata of everyday life. This extreme "cue reactivity" is only possible with tobacco, in as much as smoking has long been inextricably bound up with so many

and so varied everyday settings, reflecting its non-intoxicating impact on smokers at the doses typically available from the modern cigarette [1991: 90-97]. The intertwining of the subtlety of nicotine's drug effects with a plethora of cues from so many social settings suggests that tobacco smoking, the last drug to be authoritatively problematized as addictive, is perhaps the most addictive of all.

But what exactly do we mean by 'addict' and 'addictive' with respect to tobacco? From what truths is tobacco addiction inferred? By what knowledge is a smoker constituted as a particular type of being, "a special type of moral agent with both responsibilities and exculpations" [Hacking 2002: 24] It is to the "making up" of the tobacco addict that we must now turn.

A genealogy of tobacco addiction

The addiction concept is something of a black box from an ethical and policy perspective – often more a rhetorical device than a real referent or entity [Davies 1992, 1997]. Moreover, ongoing debates among addiction specialists are replete with suggestions that the very notion of addiction is "nothing more than" a culturally specific, "discursive achievement" that "produces" the addict as a person of compromised will [Keane, 2002; Room, 2003; Reinarmen, 2005]. Eve Sedgwick [1993] had earlier used a similar approach to explicate "epidemics of the will", the proliferation of addiction discourse to describe a variety of "invisible" or behavioural compulsions unconnected to the use of substances or "addiction addiction" [McLaren, 2000].[10]

Kuukkanen [2008] claims that concepts in general can be described as both real and constructed, if only in the sense that concepts can be decomposed into core and marginal attributes, such that "their conceptual content does not constitute an exhaustive characterization of them" [367], a formulation that allows consideration of

[10] The same process that constructs nicotine as an addiction now validates the 'behavioural' addiction concept, at least in some cases, such as gambling: see Holden, 2001.

concept change and concept replacement over time.[11] That being said, the longevity and complexity of debates on the subject of addiction would suggest that it may more usefully be thought of as polysemous, an "essentially contested concept", where there is widespread agreement on an abstract core notion, but endless argument concerning the best instantiation of that notion [Gallie, 1956]. If a core idea exists within the addiction concept, whether its marginal attributes have been dressed in religious, moral or scientific garb, it seems always to have been some variant of 'loss of control', sometimes applied to consumption, sometimes to second order behaviors associated with consumption.[12]

Addiction can be conceived as having been either discovered [Levine, 1978] or invented [Davies, *op cit*], but the concept has certainly emerged historically in different forms, in reference to perceived patterns of behaviours, with respect to different substances, associated with differing motivations and in varying historically contingent circumstances. What changed over time about the concept has been the ways in which the perceived (and labeled) behaviour and the implied inner experience or subjectivity of the 'addict' have been conceptualized and, accordingly, the social implications that have been drawn from these shifting conceptions.

The concept of addiction has undergone a number of interesting historical shifts, most notably in relation to perceptions of alcohol and inebriated behaviour [Berridge, 1990, 2003; Ferentzy 2001; Room, 2006]. The relevance of these shifts to tobacco is not straightforward and requires further genealogical work (with oblique reference to alcohol) in order to uncover the relevant connections.

Levine was among the first to point out that the modern origin of the addiction concept involved a paradigm shift in thinking (about drinking) and that "the idea that drugs are

---

[11] In this context, the notion of 'marginal' in reference to conceptual change refers to the more volatile or changeable elements comprising a concept, not necessarily 'less important'. The marginal elements may be the primary means by which the core of the concept is rendered intelligible in a specific cultural or historical context. Marginal refers then to the contextual aspects of a concept.

[12] This distinction will prove important for tobacco, where the effects are non-intoxicating. The only 'loss of control' involved pertains to the consumption of tobacco itself, not to impairment of other performances or responsibilities

inherently addicting was first systematically worked out for alcohol and then extended to other substances" [1978:494]. The first move came about in late 18th and early 19th century America, with a change in how habitual alcohol consumption was conceived, from desire to compulsion, while the second move to apply addiction to other drug substances, though inspired by American examples and agenda-setting, took place primarily through the promulgation of international treaties in the twentieth century and the combined medicalization and criminalization (or more generally, pathologization) of addiction with respect to illicit substances [Acker, 1993; Hickman, 2004].

Alcohol sociologist Robin Room -- who has also compared modern ideas of addiction to an updated form of demonic possession , at once "naturalistic and mysterious" and thus both a critical narrative device and a prime candidate for a social constructivist approach to explaining behaviour [2003] -- noted that the replacement in official drug control parlance of 'addiction', the preferred terminology of international drugs control treaties, with the more medicalized term 'drug dependence', a term which could be applied to substances both inside and outside of international control regimes, meant the terms addiction and dependence were no longer the distinguishing criteria for controlled substances [2006: 283]. As a consequence, treaty documents began explicitly to exempt alcohol from international control regimes, since there were clearly instances of alcohol dependence, yet the treaties were aiming to exert political control over different types of drug substances than alcohol.

Room quotes the 1971 Commentary to the Convention on Psychotropic Substances to the effect that "the public health and social problem which alcohol presents is not of such a nature as to warrant being placed under international control".[13] Room also pinpoints another benchmark in official drugs discourse in the 1957 WHO Expert Committee report, which concluded that "addiction-producing drugs need strict control, national and international...while habit-forming drugs [alcohol, tobacco] did not need international control" [*loc cit*].

---

[13] In May, 2008 a World Health Assembly resolution proposed the development of a global strategy on alcohol-related harms, modeled on the one adopted in February, 2005 for tobacco, the Framework Convention on Tobacco Control. Canada ratified the FCTC in November, 2004.

Room asserts that the addiction concept locates the problem concurrently in both the individual and in the substance itself [2006: 286].[14] This idea of co-location partly resolves the ontological issue of the addiction concept, although it also opens a route for the proliferation of addiction discourse as an explanation for an ever wider range of problematized behaviours [Shaffer, 1997, 2007; Sedgwick, *op cit*]. For illicit drugs, addiction talk has stigmatized the user, while the policy focus has primarily on the problematic substance itself (viz., supply-side). With alcohol, the focus for addiction discourse has typically been limited to problematized, individual drinkers, whether the "alcoholic" or the (youthful) binge-drinker. The trend towards the biomedicalization of alcohol, which built upon the alcoholism movement, has had the effect of reinforcing the individualization of alcohol problems, while at the same time insulating the producing industry from potentially stronger regulatory pressures [Midanik, 2006; Pennock, 2007]

Notwithstanding that the biomedicalization of alcohol problems has been convenient for the drinks industry, the individualization that has occurred with respect to alcohol problems (since the Prohibition experience) does tend to be consistent with the dominant conception of the autonomous citizen/consumer of advanced liberal societies. It is the drinker's behaviour in various circumstances that falls under more or less strict regimes of legal control (impaired self-control not only over alcohol, but with respect to other life activities), while the supply, though hardly free of controls, is managed by governments as a regulated consumer good and revenue source.[15]

The increasingly regulated treatment of tobacco as a consequence of tobacco control is a partial exception, a tax revenue source like alcohol, but also stigmatized as a substance with high addiction liability. It is important to understand how this latter conjunction came about.

---

[14] See David Courtright's "Mr ATOD's Wild Ride", a forum in *Addiction Theory & Research*, 2005, for more on this point.

[15] The ongoing debate about the consumer-friendly orientation of the Liquor Control Board of Ontario suggests that this stance remains controversial.

Berridge notes that the history of the addiction concept in general (*a fortiori* when applied to tobacco) cannot be force-fitted into a model of inevitable progress, but must be seen as rooted in changing inter-relationships between policy and social contexts, as well as scientific and medical networks [2007:257]. She then describes some of the "different addiction history" that tobacco had relative to shifting social, policy and medical concerns about alcohol and drugs (mental hygiene or 'inebriety'), challenging the anti-smoking activists' narrative of tobacco addiction as a "lifting of the veil... [as if upon] something which was universal and ahistorical – a representation which has affinities with the old Whig 'march of progress' of scientific understanding – with a new conspiratorial turn" [ibid].

The "conspiratorial turn" , too hastily discounted by Berridge, refers to the relatively recent disclosure of previously confidential tobacco industry documents showing that private, corporately funded nicotine and smoking science had out-stripped governments' understanding of the neurochemical pathways and role of nicotine in sustaining smoking behaviour [Glantz: 1996]. The significance of this for present purposes is simply that, until the open, peer-reviewed scientific literature caught up with the cigarette industry's undisclosed, private laboratory-based, foreknowledge of nicotine neurochemistry, a scientifically warrantable evidentiary link was not in place.[16]

The genealogy of the link between the related concepts habit, dependence and addiction uncovers a connection to the previously noted debates centred on the WHO expert committee on drug dependence, in terms of overlapping expert membership by a tobacco industry-associated psychopharmacologist on both the WHO committee and the Surgeon General's Advisory Committee in 1963-64 that determined smoking to be not an addiction, but a "habit" [Mars & Ling, 2008].[17]

---

[16] That nicotine has a "mild pharmacological action" was first noted by Langley & Dickinson in 1889, according to the US Surgeon General who concluded almost exactly 100 years after that date that cigarette smoking is officially "addictive" [US-DHHS/PHS, 1988:10].

[17] The same individual [Dr. Maurice Seevers] also served as a Commissioner in the US Schafer Commission, the 3rd chapter of which pivots on a discussion of "terminological confusion" around the term addiction [National Commission on Marihuana & Drug Abuse, 1973:121-128]. The Canadian equivalent, the LeDain Commission, whose final report also appeared in 1973, included a brief discussion, 'The concept of addiction' [293], based on an unpublished research paper done for the

The main implication for present purposes of this historically contingent distinction was that tobacco use was to be separated discursively from "drug" use. This separation comprised two main elements: the legal availability of tobacco, whose implications for behaviour were erroneously dismissed in the 1964 report, and the lack of intoxicating effects from nicotine, a half-truth that speaks to certain unique aspects of smoking relevant here, but which was even at that time not considered essential to making the distinction between a 'habit' and an 'addiction' [WHO, 1964, 273: 9; DHHS/SGAC-1964: 349-354].

The Surgeon-General's 1988 report 'Nicotine Addiction' signaled the beginnings of a consolidation of a scientific research program derived from the National Institute of Drug Abuse around the addiction concept as it pertained to smoking. This portended a further 'paradigm shift' in thinking about addiction, one closer in meaning to Kuhn's use of the term 'paradigm' [1962, 1996]; namely, a program of study and applied knowledge rooted on the one hand in new technologies for studying the brain, on the other in the profit-oriented laboratories of the pharmaceutical industry.

In Canada, as soon as tobacco became a regulated product, the advocacy group Non-Smokers' Rights Association demanded that cigarettes be labelled as 'addictive', arguing that consumers must be fully informed of tobacco risks. In view of the centrality of moralization to the social denormalization of smoking (Part I, above) it seems likely that addiction's having the characteristics of a "moralizing category" [Valverde, 1998: 26-27] played a part in the demands of advocacy aimed at enhancing the stigma by then increasingly associated with tobacco, smoking and smokers alike.[18]

Commission,'Theories of drug dependence A critical review' by Z Amit & M.E. Corcoran [1971]. The 'Tobacco' chapter (*Final Report,* Appendix A10: 447-58) implies that tobacco should be considered an "addicting drug" (15 years before the Surgeon General's ruling) [454-56].

[18] For an important nuance on the notion that the term addiction is pejorative, see O'Brien, Volkow & Li (2006) where in the medical context the term 'dependence' implying the observation of tolerance and physical withdrawal effects is seen as increasing the suffering of patients when physicians mistake it for 'addiction', the core idea of the latter being loss of control over drug intake and "intense urges to take the drug even at the expense of adverse consequences" The rationale by which some psychiatrists prefer the term 'addiction' are thus similar to the reasons anti-smoking advocates prefer it,

In response, health authorities were pressed to engage with the long history of confusion and semantic hair-splitting around habit/dependence/addiction, contracting with an expert panel convened by the Royal Society of Canada to make sense of the categorical confusions around these terms, as they may apply to tobacco. The consensus reached by this group favoured the use of the term 'addiction' when weighed in the balance with other common terms found to be more ambiguous in their meanings:

> "the term 'drug dependence', although recommended by WHO is potentially ambiguous...the term 'habituation' is unquestionably ambiguous and likely to be misunderstood...[C]igarette smoking can, and frequently does, meet the criteria for the definition of drug addiction. When it does so, it should be described as nicotine addiction...generated and maintained by psychoactive and reinforcing effects of nicotine." [RSC/HPB, 1989: 23].

Since these scientific consensus milestones of the late 1980s, the discourse of addiction has become paramount in relation to cigarettes, where it is primarily imputed as an inherent quality of the product. This inherent quality, technically an "addiction liability" – in as much as addiction as a behaviour is now understood to imply a reciprocal interaction between the substance and the user [Shaffer, 2007] -- resides in a molecular property associated with neuroadaptation in the new brain chemistry/ brain wiring paradigm.

Assembling the brain science paradigm of tobacco addiction: nicotine neuroadaptation

In February, 2004, Arizona's Doubletree Paradise Resort Hotel provided the venue for the 10th annual meeting of the Society for Research on Nicotine & Tobacco (SRNT),

---

except that the motives of the former are to "reduce suffering", while the motives of the latter were to enhance stigmatization (of the product).

the largest ever gathering of this specialized group of experts having grown rapidly from 104 charter members to some 850 registered attendees in a decade [Drobes & Klein, 2004]. The keynote address on the "brain research perspective of nicotine" was given by a representative of the NIDA, the institutional home of the brain disease paradigm for drug addictions. Dr. William Corrigall had led the first research team outside of the confines of the tobacco industry to demonstrate nicotine's reinforcing role in an animal model, by way of the self-administration protocol widely used to explore the reinforcing effects of other drugs of addiction [RCP, 2007:46].

Researching tobacco "from cell to society" is an expensive endeavour and the authors note, in passing, before turning to the keynote topics, that the major source of SRNT funding "changed from pharmaceutical companies to voluntary and governmental agencies" [Drobes & Klein: 696]. An informal SRNT history provides more detail: the year 1999/2000 marked the transition to greater reliance on government support (from NIDA) than from the private pharmaceutical sector [Pomerleau & JR Hughes, 2006:6]. In recent years SNTR's funding sources have included the American Legacy Foundation (re-cycled 1998 tobacco Master Settlement Agreement monies derived from the cigarette makers who, in turn, obtain them by way of retail price increases to smokers); the Robert Wood Johnson Foundation, a private tax philanthropy; NIDA (recurring federal government grants to defray the costs of annual meetings); National Cancer Institute (federal grant monies); "and to various pharmaceutical corporations for unrestricted support" [ibid, 2006: 8]. SRNT lies at the intersection of an institutional nicotine science industrial complex that excludes the tobacco industry itself only by way of a conflict of interest declaration and pledge by members to work toward public health goals with respect to tobacco [*loc cit*, 2006: 5; SRNT Policy on Competing Interests, 2/18/03 accessed January 7, 2008].

Another speaker noted that nicotine had now replaced cocaine as the 'paradigm drug' for addictions research; that is, the psychoactive substance capturing the greatest social, political and scientific – and thus funding – attention during a particular time period. Moreover, the lengthy and often sterile debates about the different official diagnostic

descriptions of addiction swirling around such official nosological guideline documents as DSM-IV and ICD-10, as well as the entire long-running philosophical quagmire around addiction/ dependence as a "categorical phenomenon" were summarily truncated by this speaker: instead, addiction, specifically by way of nicotine's increasingly well-characterized brain receptor actions serving as the model, is now to be described as "an emergent, dimensional process", a suitable site for "transdisciplinary research...from the molecular to the societal" [*loc cit*; also Pomerleau & Hughes, 2006:8].

As welcome as such an ecumenical development sounds, the primarily clinical work expounded at the SNRT meeting was very much focused on those areas where the greatest potential for insights and potential interventions was now thought to be located; namely, in the chemistry of the human brain for the pharmaceutical treatment of nicotine addiction. Despite the rhetorical flourishes about a multi-level approach, 'from neurons to neighborhoods', tobacco addiction was now poised to become primarily a province of neurochemistry and the identification and laboratory manipulation of brain receptor sites, agonists (site-stimulators) and antagonists (site-blockers); that is, of pharmacology and the pharmaceutical industry.

The new paradigm of nicotine addiction has been assembled from three component views of the human brain that rely on developments in the neurochemistry of nicotine receptors, the genetics of nicotine metabolism and brain imagery supplied by functional magnetic resonance (fMRI) and computer tomography. Together these developments, the "brain chemistry model" of addiction, produce a number of effects. First, this program offers a detailed picture of compulsive behaviours (addictions) that is warranted by scientific data and processes. Secondly, the technological basis of the new paradigm makes it suitable for concocting pharmaceutical treatments, some of them potentially effective, all of them potentially profitable. Thirdly, the securing of a science-based explanation provides a new dispensation for those whose behaviours are attributed to addiction (including smokers prone to relapse when trying to quit cigarette

use). Thus, the current brain science model of addiction seems likely to prove a double-edged sword.

Conceptualizing tobacco use primarily in terms of nicotine addiction brings with it both advantages and disadvantages from the perspective of smokers. The main advantage is, at one and the same time, to deflect some of the blame that arises from the pervasive social opprobrium directed towards smoking, while also offering a potential morally neutral target for treatment as a means of effecting cessation; namely, the brain's reaction to nicotine and its individual variability. The main disadvantages are found in the potential for displacement of attention from the social factors that reinforce smoking towards a radically oversimplified model of dependence curable by means of a technical fix. There is also an opposing risk that the neurochemical model of addiction may be perceived and processed by some smokers as highly deterministic and thus unbeatable, even though most smokers (half of all the people who have reported "ever smoking" on surveys, have quit) have done so without pharmaceutical supports. [19]

In a pessimistic reading, a reductionist and overly deterministic self-understanding of the brain's genetic-neurochemical response to nicotine could emerge. For example, it has been observed using brain scanners that structural changes occur in the brain's density of nicotine receptors as a cumulative consequence of smoking [RCP, 2007: 31]. These changes are translated as underlying the difficulties heavy smokers experience in trying to quit. Addiction coded in terms of brain chemistry and "re-wiring" may be experienced as all too real in their scientificity and thus a deterrent to exerting individual locus of control in the traditional form of "willpower". Indeed, the brain location of the centre for "self-control" (the "will") is said to have been pinpointed [Hare et al, 2009], opening further possibilities both for the waning of everyday, informal notions of personal responsibility and self-management. It is possible that at

---

[19] Nor is this risk limited to smoking: a former Food & Drugs Administration Commissioner already famous for his efforts to regulate tobacco in the United States in the 1990s, David Kessler, claims that "hyper-palatable" foods (sweet or salty) "change our brain chemistry" is ways that "make us" overeat. [2009, Chapter 12 , "Rewarding Foods Re-Wire the Brain"]. This new model of addiction comes with the risk of scientific exculpation for a plethora of compulsive behaviours

least a resistant subset of 'hard core' smokers – comprising by a conservative definition about 16% of all smokers, or two per cent of the Canadian population [Rutherford et al, 2007] -- may rely on brain science findings (as they are more widely and popularly disseminated) to fatalistically characterize their own behaviour as unchangeable because there are physical bases that have been identified that may be seen as stronger than mere individual determination to exert one's will-power.

Seen through the prisms of nicotine neurochemistry, genetic susceptibility or fMRI brain imagery this facticity of the brain science model of addiction could offer at one and the same time both pharmaceutical aids and a plausible basis for avoiding the often difficult personal efforts involved in embarking on smoking cessation.

A genealogy of smoking cessation:
Starting to smoke is much easier than quitting

However addictive a drug (including tobacco) may be, and however constrained autonomy may be once use has become 'habitual', the initial consumption logically allows of a voluntaristic element, often glossed as a "lifestyle choice". In the social settings where these initial choices take place, they are shadowed by either ignorance or discounting of the temporally distant adverse health consequences of smoking and by the invisible force fields of promotional marketing and local social influences [Weinstein, 1998].

The standard model or explanatory paradigm for beginning to smoke involves so-called peer group pressure, reinforced by advertising and availability. The weak link in this model is the under-theorized notion of peer pressure, which leaves out the important linkage that the governmentality perspective uncovers, the self-conception or *subjectification* of the smoker. The notion of peer group *pressure* has long underpinned a kind of 'blaming bad companions' approach to explaining why youth begin to smoke. However, peer pressure provides no firm explanatory leverage, as it places at a further remove the reasons why peers supposedly have this influence and relies in the end on

untenable assumptions of deviancy on the part of the social influencers. Richard Eiser's social-psychological approach adopts the perspective of "distinction" (although apparently innocent of Bourdieu).

> "The covariation of smoking and friendship patterns...is not primarily or necessarily a sign of peer group pressures to smoke so much as evidence of a division within the peer group...[T]he distinctive social identity that, we hypothesize, teenage smokers may seek to achieve may therefore not be necessarily or even primarily a distinctiveness from adult conventions [in fact there is evidence from marketing studies that 'adult only' claims are highly attractive as a forbidden fruit] so much as from the conventions of a proportion of their own age group from whom they are anxious to be discriminated. The identity concerns of adolescents may be focussed at least as much on their subjective distinctiveness within their own reference group...[W]hy cigarette smoking should be part of such subjective distinctiveness for many teenagers is a question which invites speculation.... [C]igarettes are widely advertised and easily available....[T]he kind of psychosocial motives [noted above], though potentially powerful, may operate only within the constraints imposed by environmental factors." [Eiser & van der Pligt, 1984, 360-361]

This striving for distinction is a reminder that despite much warning about addiction, becoming dependent on smoking is an inadvertence on the part of youth, who typically start smoking for social reasons of identity management [Leary et al, 1994]. If the subjectivity of starting down the path of tobacco dependence is more or less a youthful accident, however, ending that dependence is a much more conscious process of self-management or self-regulation.

Smoking cessation can be characterized as 'tobacco product dis-adoption' [Redmond, 1996]. As a practice of self-governance, smoking cessation can be considered the adoption of specific techniques thought to be efficacious in breaking the smoking habit, or an innovation in the smoker's behavioural repertoire that must be discovered,

considered, learned and 'put into practice'.

"Cigarettes are highly addictive" & the imperative of quitting

In Canada, official advice and regulations about smoking have been based on the assumption that cigarettes are addictive and smokers addicted since 1994, when the world's first cigarette package health warning to that effect made its appearance: "Cigarettes are highly addictive. Studies have shown that tobacco can be harder to quit than heroin or cocaine: Health Canada".

Lest this message be deemed overly discouraging, the same regulations require the manufacturer to display further messages (on package inserts) informing smokers that "cessation is possible". In fact, more than half (9 of 16) different package insert cards required by law offer smokers advisories relating to the procedures for achieving smoking cessation.

A certain tension is generated between such a statement and the underlying premise of the associated health promotional effort, which is to enhance smoking cessation by appealing to the self-empowered, rational liberal subject: "Choosing to quit - It's about knowing who you really are and deciding what you want" states the opening line of a smoking cessation manual addressed to adult smokers [*On the Road to Quitting*, HC, 2003; 'www.smokefree.ca'].

Any implicit subjectification of the smoker as an 'addict' (and by implication lacking autonomy) conflicts with the expectation that quitting is not only possible, but the only rational thing to do. The legal requirement for a cigarette package insert is deployed to offset the 'lack of autonomy' message by providing encouragement ("You CAN quit smoking!") as well as advice, ranging from adopting specific quitting practices ("Take it one day at a time" etc) to consulting with appropriate experts or seeking a pharmaceutical alternative ("talk to a doctor, nurse or pharmacist or visit the website") [www.infotobacco.com] But, the modern addiction paradigm, which locates addiction

in the biology of the brain, being by implication a disease concept with nicotine addiction physically localized in brain receptors, smoking cessation is thereby rendered into a suitable target for medical interventions.

For many smokers, dependence on cigarettes and withdrawal from their use is, they report, a visceral experience; craving can present as a whole body experience, not unlike thirst, becoming a dominant motif dissipating the internal effort to focus the will [Lowenstein, 1996, 1999]. Learning to smoke in the first place would appear to be a 'technique of the body' that Marcel Mass overlooked [1934; J Hughes, 2003]. Smoking cessation is for many smokers (the majority said to "quit on their own"), a learned form of modern "health behavior" [Armstrong, 2009]. For those who perceive themselves as "heavy smokers", "hard core" smokers or simply as "addicted", cessation comprises an especially challenging disciplinary regime of the body.

Without doubt, however, smoking cessation is a 'technique' or 'practice' of the self through which people (smokers striving to become non-smokers) "[re-] constitute themselves and their identities" in relation to persuasive and coercive pressures installed into the social environment by way of authoritative techniques of governance in the name of health promotion [Foucault, 1988, 1991; Burchell, 1993]. If addiction is a "disease of the will" [Valverde, 1998], then smoking cessation techniques are a cure, but only to the extent that they can focus the discipline of the self, a task which has slowly been medicalized by the introduction and greater availability of pharmaceutical aids.

Techniques of cessation, whether they entail unaided willpower, the use of substitute nicotine products (NRT), counseling, hypnosis, laser therapy, acupuncture or any of a dizzying variety of other methods, require mental, physical, temporal and sometimes financial expenditures, warranted to varying degrees by claims of expertise and entrained by way of health- and social life-related personal, psychological and/or ethical reflections relating to motivation and persistence.

Like the innovation that the cigarette itself once represented [Tate, 1999; Brandt, 2007], the adoption of smoking cessation techniques is subject to patterns of social diffusion facilitated by information and availability of cessation-related resources and constrained by social status differences [Rogers, 1995]. According to the US National Cancer Institute, "prior to the mid-1950s [when the smoking and health controversy began to be publicized] smoking cessation was uncommon at any age" [Fiore, et al, 2000: 2]. Moreover, smoking cessation is "not simply a naturally occurring consequence of aging", but correlates strongly with public education and media campaigns, rising and falling in tandem with increases and reductions in the most salient public education efforts [*ibid*].

If smoking has been socially stigmatized to the point that being a smoker is virtually synonymous with exhibiting "defective self-care and lack of cultural sophistication" [Hunt, 1999: 199], then for smokers responsive to moralization pressures, whether from non-smoking partners and peers or due to smoking restrictions at places of work or entertainment, adopting cessation practices successfully is often a point of pride, though sometimes a begrudging one. Smoking cessation is a practice of self-*re*formation, one that is undertaken with varying degrees of difficulty related to smokers' self-perceived (or sometimes diagnosed) degrees of tobacco dependence.

A dominant theme in the political rationalities of advanced (neo-) liberal society is the privileged position accorded to the individual autonomy [Foucault, 1978-79, 2008]. It may be more accurate to speak of an *obligation* to be autonomous, to manage one's freedom within the social field of "coercive permissiveness" [N. Rose, 1989; Reith, 2004; Berridge, 2007].

Addiction to cigarette smoking is viewed as the opposite of autonomy, although it may sometimes by portrayed by resistant smokers as defiance or rebellion. The oft-heard claim that most smokers "regret" having started smoking and want to quit [Fong et al, 2004] provides an ethical basis for "soft paternalism'; that is, state-sponsored interventions designed to "guide people towards choices they would make for

themselves" [*The Economist*, April 8-14, 2006: 15, 67-69]. In addition to moral regulation by way of smoking restrictions, tobacco control puts in place a number of what some term soft or "libertarian paternalism" measures [Thaler& Sunstein, 2008] – labeling of cigarette packaging, youth access statutes, smoking restrictions themselves, banning of open display of tobacco products at retail locations, etc. These are aimed at supporting and strengthening individual autonomy by making what is advised to be the healthier choice easier, aligning the signals from the social/ commercial environment in particular ways. These tobacco control measures along with their associated din of "inescapable messages" [NCI 2000: *loc cit*] provide on the one hand examples embodying the notion of governing through freedom (with reference to the potential smoker and smokers), while on the other hand, they provoke controversy, their very intrusiveness as visible and tangible constraints or reminders having been mobilized (viz., by retailers, in oppositional editorials, etc) in the name of autonomy to resist their adoption.[20]

Whether the advice to quit smoking emanates directly from health authorities or indirectly by way of more proximate social pressures, and whether that advice entails the purchase of a service or product from the market, including in some provinces state-subsidized supplies of NRT or pharmaceutical prescriptions (viz., bupropion or varenicline) [Lung Association, 2008; www.STOPstudy.ca (Smoking Treatment for Ontario Patients], individual smokers are incited to change their everyday coping styles by exercising their own volition in ceasing to smoke.

Smoking cessation practices have shifted considerably since the very idea of quitting smoking was widely disseminated by Canadian health authorities starting in the early 1960s and intensifying throughout the 1970s [Cunningham, 1996]. What all cessation methods have in common – except for group therapy approaches for smokers with 'co-morbid' mental health conditions – is a focus on asserting or reclaiming autonomy by way of the exertion of will-power, whether by quitting 'cold turkey' or by taking

[20] These measures pre-date Thaler & Sunstein's terminology. As with state-sponsored health advisories, the sub-title of their book embodies the presumption that their advice can "improve decisions" by individuals.

incremental steps.

In the narratives of recovery from addictive behaviours, different stories from the culturally available stock of narratives tend to be told by representatives of different addictions, "mastery narratives" being most closely associated with the stories told by ex-smokers [Hanninen & Koski-Jannes, 1999]. Mastering smoking cessation confers a form of self-validation, evidence that the individual is no longer associated with an increasingly stigmatized activity that implies lack of personal skill and will power. Remarkably enough, more than 90% of smokers who successfully quit, are said to have "done so on their own" without any form of treatment whatsoever [Carmody, 1993; DHHS/USSG 2000: 100]. This may be the conventional wisdom, but self-help has been increasingly encroached upon and superseded by guided and pharmaceutical approaches held out to be more effective [OMA 2008; US-PHS-2000].

Stages of change

The predominant model for classifying smokers in relation to smoking cessation is the so-called 'trans-theoretical stages of change' model, or readiness to quit [Prochaska, 1982, 1983, 1997]. This highly influential model was applied first to smoking, then to all manner of personal changes processes, many related to health or 'problem" behaviours [1994]. Leaving aside as beyond the scope of this paper the notion that there could be a truly "trans-theoretical" approach to conduct or behaviour, the "stages of change" concept has been subjected to extensive critiques from a variety of positions, both methodological [West, 2005; Kalman,2004], primarily around issues of model validation, and ideological [Bunton et al, 2000], primarily the claim that the model "constructs risks as individual problems" [*ibid*: 66].

For present purposes, the main significance of this approach is its common sense appeal, since it accords in a very general way with the self-perceptions of smokers that cessation is a often experienced as an arduous – and *pace* Bunton et al, highly individual -- process of repeated attempts punctuated by periods of relapse, for which

the notion of "states of readiness" (framed as "decisional balance for self-efficacy" and comprising six stages, "pre-contemplation, contemplation, preparation, action, maintenance and termination" [*ibid*, 1997]) provides a rough guide for success, failure and the explication of these outcomes.

Since typically smokers will make several unsuccessful efforts before quitting without further relapse, advisories based on these kinds of guidelines help make cessation thinkable (and doable) for the smoker seeking to reclaim a sense of self-governance from dependence on tobacco use. The contributions of tobacco control to this process include the above-noted changes to the perceptual environment around smoking, as well as (inadequate) levels of support for helping smokers beset by more fundamental causes of health inequality with the cessation process.

Critiques of the stages of change model parallel broader critiques of health promotion to the extent the latter term faces limitation is coming to grip with the social determinants of health and by extension the socio-economic and socio-cultural barriers and constraints on the effective exercise of 'self-efficacy'. More pertinently, given that the model was developed to address addiction issues, it is noteworthy that for smokers scoring higher on baseline measures of dependence (using various scaling questionnaires) and who have little or no history of previous quit attempts, the model is a poor predictor of cessation outcomes [Farkas et al, 1996]. Moreover, it was found that "the [cessation] process should be considered a continuum rather than a set of stages", that smokers typically do not pass through all the stages, in fact "move both ways on this quitting continuum" and that the cessation process "may take as long as 10 years" [Pierce, Farkas & Gilpin, 1998]. These sorts of findings are in line with the consistent findings from surveys that despite the expressed desire of the majority of smokers to quit, the average quit rate (usually expressed in "after 6 months" and "after 12 months" measures) is quite variable, but continues to be in the range of 2-4% annually [Levy et al, 2010].

Considerable thought and ingenuity are expended on producing brochures, guidelines

and advisories in a variety of formats to assist smokers. For example, some current offerings even distinguish between, and provided distinct advice aimed at, smokers 'trying to quit', smokers 'not yet ready to quit' and 'people helping smoking friends and relatives to quit' [CCS brochures, 2008: www.cancer.ca, accessed March 31, 2010].

Cessation advice has also evolved in relation to the degree it presumes individual effectiveness in mobilizing the will, cold turkey advice having given way, in the years since NRTs were first invented for use by smoking submariners in the Swedish Navy [Berridge, 2007: 270], to guided practices involving the setting of personal goals, taking note of smoking occasions and their correlates, avoiding specific associations with smoking and detailed self-monitoring [ibid].

The discourse of addiction together with the prescription availability of nicotine-based replacement therapies (NRT) brought additional advice for those experiencing particular difficulties in quitting, initially focused on obtaining the attention and care of the family doctor. Increasingly since NRT have become over-the-counter products no longer requiring a prescription (although still sold through pharmacies to ensure a modicum of pharmaceutical oversight), cessation advisories have included information noting that quit attempts accompanied by short-term use of NRT products (patch, polacrylic gum) can be more successful. Nicotine gum with a higher level of active ingredient (4% rather than 2%) was permitted on the Canadian market within the past decade.

Beginning in the 1990s, non-nicotine pharmaceutical aids became available by prescription (first bupropion, then varenicline), recommended mainly for smokers who experience depression on trying to quit, but these products are themselves associated with the risk of inducing or reinforcing suicidal ideation [http://www.hc-sc.gc.ca/advisories]. The most recent stage in making pharmaceutically assisted smoking cessation available has been gradual changes in authoritative indications for NRT use, expanding to include youth, pregnant women and longer-term use as a means

of reaching sub-populations of smokers earlier and trying to insure against relapse to smoking which typically happens to many quitters within the first 3-6 months. Advice on smoking cessation is now highly tailored to specific audiences, including, notwithstanding the many social determinants of health barriers many Aboriginal smokers face in achieving individual smoking cessation goals, First Nations [Wardman et al, 2007].

More recently, the geneticization of nicotine addiction has also been incorporated into smoking cessation, with mixed results on perceived self-efficacy, motivation and relapse/ quit outcomes [Audrain 1997; McBride, 2002]. In a small study (N=269) linking genetic knowledge of susceptibility with pharmaceutical NRT, it was found that participants with knowledge of positive test outcomes for genetic susceptibility to nicotine addiction were less likely to say they that they would use their own willpower and more likely to opt for an NRT-assisted cessation approach [Wright et al, 2003:229].

All smoking cessation methods to varying degrees rely on the self-formation of the smoker seeking to identify the 'stage of change' appropriate to their own self-understanding and to re-identify themselves as (or "become") non-smokers through personally directed, although sometimes professionally guided or pharmaceutically assisted, efforts. In reaction to the persistence of low rates of quitting, addiction discourse has increasingly enabled not only total abstinence from cigarette smoking, but also longer term nicotine replacement strategies, amounting to the substitution for cigarettes by safer NRT pharmaceutical products, sometimes referred to as 'medicinal nicotine' (MN) [Lung Association, 2008, Making QUIT Happen: "Nicotine addiction, a key challenge to cessation"].

Neo-liberalism, re-making the person and the 'hard core' smoker: limits to cessation?

The term "neo-liberal" in reference to the political rationality underpinning the anti-smoking project has a negative implication for many. For example, analysts who

emphasize the overriding significance of the social determinants of health as barriers or reproaches to efforts to encourage smokers with low income adequacy to try quitting[21] , also characterize health promotion campaigns urging smoking cessation as being de-contexualized and victim-blaming [Raphael, 2008].

Medico-moral concepts of self-constitution like "self-esteem" [Cruikshank, 1993; Ward, 1996] and a "duty to be well" [Greco, 1993; Conrad, 1994] are mobilized in modern biopolitical rationalities to forge a link between the population health aspirations of authorities and individual self-governance with respect to harmful behaviours like smoking. In the US, the pressures have been starker and reach into the personal lives and lifestyles of employees even when they are not at work, amounting to a command, "get healthy -- or else" [Conlin, 2007].

In a number of different countries that have pursued strategies of tobacco control, there is increasing evidence of a social gradient in smoking [Feldman & Bayer, 2004, *op cit*]. There is also emerging evidence of differential genetic susceptibility to cigarette addiction due to variations in bodily capacities to metabolize nicotine [Tyndale & Sellers, 2004], as well as a strengthening connection between co-morbidity in the form of mental illness (eg., major depression and schizophrenia) and smoking status [Dagenhardt & Hall, 2001; Morisano et al, 2009]. Findings and trends in all three of these areas of study point to the limits of applying any simplistic, disciplinary version of a "duty to stay well" to the residual smoking populations [Greco, 1993].

In the prescient words of historian Allan Brandt writing almost twenty years ago:

> "Behaviors such as cigarette smoking are sociocultural phenomena, not merely individual, or necessarily rational. The emphasis on personal responsibility for risk taking and disease has come at the very moment when cigarette smoking is increasingly stratified by education, social class and race." [1992:172]

---

[21] Some provinces subsidize courses of self-treatment with NRTs [Lung Association pamphlet, 2008 (development/publication "made possible by an educational grant from Pfizer Canada Ltd."].

If an increasing proportion of remaining smokers in Canada is less likely to be able to achieve cessation without relapse – that is, to be (in various formulations) 'persistent', 'recalcitrant', 'intractable' or 'hard core' – then they are more likely to be seen as a deviant minority, to be both shunned and offered medical treatment [as foreseen by Troyer & Markle, 1983].

Debates over the extent of so-called 'hardcore' smoking have been inconclusive so far, with some experts claiming to see a "hardening of the target", other claiming that the evidence for hardening is weak [David Burns *v* JR Hughes in NCI #15, 2001; Chaiton, Cohen and Frank, 2008]. The debate hinges on how the 'hard core' is defined as a construct and then how it is measured. Jarvis et al [2003] defined the hardcore by four criteria: they had gone less than one day in the past five years without a cigarette, had made no quit attempts in the past year, expressed no desire to quit and when interviewed had no intentions of quitting. These authors found that 16% of all (British) smokers were in this category, although they also noted (in agreement with the American analysis of "hardening") that the proportion of hardcore smokers "does not necessarily increase as overall prevalence declines". Jarvis concluded that some (indeterminate) proportion of the resistant or hardcore smokers "could be persuaded [sic] to quit through interventions targeted to the particular needs of the socially disadvantaged and older smokers" [2003:1061]. The truth of this assertion is difficult to assess, since it presumes the feasibility of ever-finer (and decreasingly cost-effective) "targeting", as well as a capability for more appropriate interventions to be able to overcome the very social determinants implicated in the persistence of smoking that is the "target". In Canada, using a similar set of conservative criteria, a sub-set of "resistant" or "persistent" smokers of similar proportions can also be identified, amounting to between 500,000 and 1 million Canadians [Based on my estimates derived from Rutherford, Snider & Kaiserman, 2007 (Millward Brown)].

The increasing emphasis on the social (status/ income/ class) determinants of health is emerging tangentially to the growing scientific consensus characterizing nicotine

addiction as a genetically controlled neurochemical phenomenon. Although smoking has shown an increasing social gradient as those with higher educations tend to quit earliest, it is less clear than an inborn bio- or neurochemical predisposition to nicotine dependence is similarly socially distributed. (See above on the overlap between "populations at risk" and "vulnerable populations".)

In terms of the 'risk-avoiding individual' who experiences great difficulty in maintaining smoking cessation without constant relapse, policy faces a difficult choice, between attempting to address 'root (social) causes' directly or empowering presumptive neurochemical selves of all social backgrounds by means of the availability of substitute nicotine products. In light of the inherent difficulties in significantly changing the social determinants of health themselves, which frame tobacco control discourse from the outside, the latter course of action seems more plausible, in which case the harm from tobacco could be separated from the addiction liability, at least in part, by relying on substitute addictions (long term use of alternative products) to achieve authorities' public health goal of reducing tobacco-attributable harm.

Both the practical (regulatory) and the ethical challenges implicated in this choice are far-reaching and unresolved. At the level of the individual smoker, the ethical self-formation of the former daily smoker (presumably addicted) who can succeed through the application whether immediate or staged in increments of 'will-power' alone would be expected to differ from that of both more heavily addicted smokers who fail (and relapse into continued daily smoking) and also from those who succeed in replacing one nicotine addiction (smoking) for another. For one thing, the cost of maintaining an alternative dependence is likely to be significant, even if more affordable than highly taxed cigarettes.

Perhaps more pertinently to the theme of [re-]making of the self, the discourse of addiction with its pathological and medical undercurrents, poses a difficult challenge for both smoking cessation and tobacco choice-making more generally. Self-

constitution, the task of establishing identity, is about the kind of person one wishes to be(come) and so to be perceived by others. Robert West, one the foremost theorists of addiction, demonstrates the starkness of the issues at stake when expertise is marshaled to support cessation from addiction, of which dependence on smoking may provide the paradigmatic example:

> "[E]xcept in rare cases we are not carrying out the psychological equivalent of surgically removing a tumour from an otherwise healthy body. We are seeking to reshape the addict's motivational system – to change the addict as a person. In some cases, this may go to the root of his or her being." [2007: 33]

In his seminal book *Governing the Soul* [1989], Nikolas Rose emphasized the critical point of liberal citizenship that persons are not simply free, but are "obliged to be free":

> "However constrained by external or internal factors, the modern self is institutionally required to construct a life through the exercise of choice from among alternatives…every choice we make [here he refers specifically to "commodities'] is an emblem of our identity, a mark of our individuality, each is a message to ourselves and others as to the sort of person we are…[T]he self is not merely enabled to choose, but obliged to construe a life in terms its choices, its powers and its values. Individuals are expected to construe the course of their life as the outcome of such choices and to account for their lives in terms of the reasons for those choices." [227]

It is to some possible implications of this 'neoliberal existentialism' that I now turn.

PART III: Nicotine & Neurochemical Selfhood

Governing nicotine neurochemically?

> "Addiction is not something we are trying to discover, it is something that we create through the ways we consider it as a society...[D]iscourses are not a form of social control, but offer a way of understanding how we are recruited in our own government." [Bailey, 2005:536]

Addiction is the leitmotif of tobacco control and it is said to reside in both the substance, the molecular force of nicotine, and in the smoker, the neuroadaptation of the brain both to nicotine and repetitions associated with nicotine-enhanced cue-reinforcement. What difference does this brain paradigm of nicotine addiction make?

Building on Ian Hacking's seminal notion that "human kinds" (also termed "interactive kinds" [1986, 2001, 2002]), as categories, are contingently "made up", by way of what counts at different historical times as authoritative discourse, Scott Vrecko has posited a "neurologization" of everyday life through the osmosis of brain science ideas into popular culture [2006]. That addiction and addicts are now thought of in terms of brain science (as distinct from previous notions of "character", "the soul", although not necessarily distinct from "moral responsibility" [Hyman, 2007]) produces the smoker as a "neurological human kind" [Vrecko: *ibid*]. In a secular age and a consumer society, a period also marked by unfolding biomedicalization, this discursive formation seems likely to increasingly delineate "the thinkable" in accounts of human behaviour, especially the addictions.

Like all previous paradigms of explanation in their respective times, places and cultural moments, brain thinking brings its own value proposition -- the hard work of behavioural change gets an assist from therapeutic products whose properties carry the warrant of science -- as well as its own downside -- the possibility that treatments, as

well as prevention treatments (viz., "nicotine vaccines") could become mandatory, ushering in a new and harsher, reductionist paternalism [Hall, 2006].[22]

At the same time, it is useful to remember that there is no inevitable progression of paradigms and current understandings of addiction (and tobacco) remain a complex amalgam of the soulful, the psychosocial and the neurobiological:

> "Despite this expansion of the biological, it remains the case that drug effects are described in the psychological language of need and desire, for example tolerance is described as a *need* for increased amounts of the substance to achieve the *desired* effect." [Keane, 2002: 45(Emphasis in original)]

Bailey notes that addiction emerged primarily as a moral concept and that many popular discourses of addiction position it as "inherent in the person rather than the activity" [ibid: 340]. But addiction discourse in all of its growing scientificity can be seen as expressing an intent to emphasize the seriousness of compulsive behaviour, to pathologize *both* substance and behaviour relating to a substance (leaving aside so-called 'behavioural' or 'invisible' addictions for present purposes). What are the implications of this new way of speaking about addiction to tobacco? Does it make thinkable a different future course for 'controlling tobacco'?

In view of the unparalleled extent of the chronic adverse health outcomes attributed to habitual smoking, an account of tobacco addiction that posits the regular use of tobacco products as a pathology has a feeling of inevitability about it. Moreover, it also squares with the social denormalization of smoking and society's growing perception of persistent smoking in the face of widespread condemnation and rules-making as increasingly a form of deviance [presciently outlined by sociologists Troyer & Markle, 1983]. The smoking of legally available tobacco products is increasingly viewed as a symbol of spoiled identity, a Durkheimian reminder of the tensions between normal and

---

[22] To date, this approach is being tested and promoted solely to assist smokers with cessation, not as a preventive vaccination [E.Cerny & T. Cerny, 2008; Cornuz et al, 2008].

pathological consumption [Reith, 2004; Bailey, 2005]. As Helen Keane notes, the addict is seen as having a sickness, out of sync with the modern value placed on the healthy body and thus not demonstrating a 'proper concern for self-care" [*ibid*, 53]. This is the light in which smokers are, and may increasingly be, viewed.

In the face of these trends, it is also acknowledged though not widely discussed that smokers smoke for the most part not because they seek a deviant status, nor necessarily to avoid withdrawal symptoms, but also because they derive some perceived benefit. This is not a view that accords with the positions of the anti-smoking movement or with any authoritative discourse around the tobacco issue, whose essential position is captured by Davis et al:

> "Tobacco does not serve any basic human need; therefore, the purchase price of tobacco is an immediate cost to the user without corresponding benefit" [2007: 175].

This sentiment is widespread and neurologically inclined experts are also prone to this anhedonic view. For example, in an otherwise model discussion of why the neurochemical brain science approach to addiction need not rule out an irreducible voluntaristic component of moral responsibility, Hyman notes that "addictive drugs are Trojan Horses. Unlike natural rewards, addictive drugs have no nutritional, reproductive or other survival value." [2007]. This "hijacking the brain" view that seems to rule out pleasure for its own sake as a reward with some redeeming evolutionary value, would appear to be a necessary rhetorical bulwark against anticipated criticism from authorities that brain science may give addiction a "free ride". But the effects of nicotine considered from a broader evolutionary perspective would appear to have some value in themselves. Not only would nicotine in non-combustible forms be needed to wean at least some smokers away from the hazards of smoking, but nicotine may also serve as a potential therapeutic agent with the capacity "to block obsolete emotional responses and fine-tune arousal levels [attentional function]" while causing little or no harm [Pomerleau, 1997].

The link between compulsive consumption of nicotine and disease risk being a contingent one, the future of nicotine addiction could be considered either unresolved or open-ended. Advanced liberal societies have problematized numerous forms of substance (ab)use, with tobacco seemingly on a trajectory towards illicit status at some future time. All tobacco has been so socially denormalized that it may be difficult to see past the wall of now taken-for-granted stigma. But, given that in the form of nicotine products other than those that are smoked, tobacco's harm is primarily a function of technology, not necessarily of an inherent hazard, need this trajectory be inevitable or might it be truncated at some point?

> "[w]e can use our knowledge to develop sensible strategies for prevention, treatment and public policy to manage a problem that is likely to persist because it is rooted in the fundamental design of the human nervous system." [Nesse & K. Berridge, 1997: 65]

That unsolicited advice from the evolutionary perspective was offered to temper the 'war on drugs', but it would seem possible to apply it *a fortiori* to tobacco. What future then for smoking, smokers and others whose use of nicotine products would not attract the wagging finger? Need nicotine neuroadaptation result in the pathologization of identity?

Governing neurochemical selves

In thinking about how tobacco and tobacco users may be governed in future, it is important to first think about what kind of a drug is nicotine. Beyond the key datum that in available modern doses nicotine is non-intoxicating, thus eliminating a wide swathe of second order drug-related self control issues [Wilbert, 1987; Benowitz, 1998; J. Hughes, 2003], does nicotine have beneficial effects? Even if these are limited to the subjective beliefs of smokers, might nicotine in safer forms not address those needs?

That question of benefits depends whether it is asked in relation to non-smokers or habituated smokers who have been temporarily deprived [Henningfield & Heishman, 1994; Heishman, 1999]. The dominant interpretation of the plethora of findings from pharmacological research done with varying degrees of methodological soundness by universities, governments and the tobacco industry [Turner & Spilich, 2006], is that nicotine can reverse withdrawal effects in deprived smokers. By contrast, the hypothesis that nicotine-induced cognitive performance enhancement may contribute to tobacco use during the early stages of the development of dependence is not well supported, although a growing number of studies claim that the risk of addiction is present from "the first cigarette" [Heishman & Henningfield, 2000, 2009; Gervais, et al, 2006; DiFranza et al, 2007]. Although Pomerleau et al claim that the likelihood of becoming tobacco dependent is related to whether initial smoking experiences were viewed as "pleasurable" [1993], once a person becomes a regular smoker the role of pleasure becomes a lot less evident [Kozlowski et al, 1989].

In tobacco control circles it is widely asserted that smokers do not smoke for benefits, but only to head off withdrawal deficits, a theory of motivation that captures the priorities of smokers trying to quit and aligns with the policy imperatives of prevention, protection and cessation. The question of nicotine euphoria and pleasure is controversial in the tobacco control literature and is linked to a wider debate about whether there are any true cognitive performance benefits to nicotine other than those associated with relief from withdrawal in established smokers [Henningfield, 1994].

At the same time, the brain addiction science approach to nicotine elaborated through NIDA-sponsored research is premised on the notion that nicotine directly stimulates the brain's reward circuits, both directly and indirectly [Zickler ('NIDA Notes'), 2003]. Further, the tobacco section of the World Health Organization's sourcebook *Neuroscience of Psychoactive Substance Use & Dependence,* presented as "an authoritative summary" and prepared with the involvement of Jack Henningfield, a leading nicotine expert, acknowledges a range of beneficial effects associated with nicotine:

> "Nicotine causes observable behavioral effects, such as mood changes, stress reduction and enhancement of performance...arousal, increased attention and concentration, enhancement of memory, reduction of anxiety and suppression of appetite." [WHO, 2004: 75]

At least one tobacco control analyst, a specialist in smoking cessation, has ventured to suggest that notwithstanding the social environmental factors that can be addressed preventively by tobacco control policies, there are inherent attractions to nicotine that help explain why smoking is so frequently associated with dependence [JR Hughes, 2001]. The folk psychology linkage of 'intoxication' and 'addiction' does not hold for tobacco use, a circumstance that leads youth to underestimate their ability to stop smoking once their use has become regular, but also opens possibilities for thinking differently about the future of nicotine.

Past, present and future, nicotine is a highly toxic chemical with unusual properties: in the relatively minute amounts needed by tobacco users (whether smokers or smokeless, tolerance to nicotine's subtle effects is established at relatively low doses [Perkins, 2002]); it is associated with not only "low behavioural toxicity" [Benowitz, 1998], but also with remarkably few adverse health implications [RCP, 2007: 126, 161]. If freedom has morphed into the exhibition of self-control as Marianne Valverde suggests [1998], need tobacco use which is compatible with, perhaps even a drugged embodiment of that very thing, self-control (by way of the micro-management of mood and affect) always be so despised?

It would appear that except for the brain science notion that nicotine addiction is a pathology, its regular use in forms that require neither smoking nor spitting – whether a tobacco product like moist snuff or a "medicinal" nicotine product for therapeutic purposes – need attract neither opprobrium nor moral regulation.[23]

---

[23] An important *caveat* seems necessary here: smokers do not 'lose control', other than over their consumption of tobacco itself, although even here tolerance is fairly rapidly established as a plateau level. Nonetheless, even in cases where nicotine is decoupled from tobacco-related harm, compulsive

Taming tobacco

Policy-driven societal changes in the use of tobacco have been the major success story of modern public health, so much so that tobacco control has become a model and touchstone for further campaigns aiming to modify behaviour for health, safety or other social change purposes. Despite this great success, the ultimate outcome of tobacco control seems likely to eventuate in the indefinite continuance of tobacco use in some form(s) and at some non-zero level. If the contraband were ever to be brought fully under control and the regulated tobacco industry is unable to mount significant promotional efforts, it is conceivable that the levels of tobacco consumption may some day be almost frictional (in the sense that a certain level of unemployment is to be expected). More likely in view of what science is telling us about the genetic and neurochemical basis for dependence on nicotine, not only smoking (the most efficient and fine-tuned way to ingest nicotine), but other forms of dependence on this addictive substance are likely to prove endemic. Smoking prevalence rates among both vulnerable socio-economic and socio-cultural groups will lag far behind even these continuances of tobacco dependence, due to the inherent difficulties involved in expecting a substance-oriented project like 'tobacco control' to reach through social barriers – unless there are broader, policy-enabling socio-political changes.

Populations 'at risk', those from any class of society who for reasons of metabolism or brain function experience what is being cast as an intrinsic susceptibility to nicotine's effects, are another matter. Tobacco control can reduce their exposures, even though it cannot tame the experimentation and perceived invulnerability of adolescence

Controlling tobacco as a public health project began under the auspices of the welfare state, but has survived the gradual and partial shift in the direction of a neo-liberal

---

regular use would have economic and thus ethical implications in a consumer society. Consumer products may be useful, symbolic and positional or merely frivolous, but the establishment of an 'addiction liability' as partly inherent in the product, linked to users conceived as having an intrinsic biological (neurochemical/genetic) vulnerability for the active ingredient, would make its ongoing purchase an end in itself, a source of profit for sure, but also a detriment for persons of inadequate income to sustain indefinite use

rationality of governance. The citizen/consumer produces him/herself through engaging with, whether by acceptance or resistance, any number of cross-cutting authoritative streams of advice on all the intricate facets of modern everyday life.

Through tobacco control, as with legalized gambling, an increasingly neo-liberal 'minimal state' finds renewed rationale for levying otherwise unpopular taxes on voting populations politically allergic to being taxed, but sensitized to health risk and annoyed or even alarmed by the smoking of others. Despite the inevitable temptations of this cynical view, the accomplishments of tobacco control in limiting the most persistent quotidian factor affecting people's health have been significant. If it is accepted that measurable declines in smoking and tobacco consumption -- both quantitative and qualitative, especially in terms of public etiquette, self control and the regulatory re-zoning of public space -- are attributable to tobacco control policies and their related socio-cultural linkages, then this is a project of biopolitics that has by any reasonable measure succeeded. Not only does the number of former smokers now surpass the number still smoking, the industry servicing the demand for tobacco faces a phalanx of health care cost recovery lawsuits from governments, to redress the imbalance in health care expenditures brought about by decades of deceptive trade practices [NAAG, Master Settlement Agreement, 1998; Kessler 'Final Opinion', August 17, 2006].

Any pay-off in population health remains latent: currently, about one Canadian in seven persists in smoking and those re-cast as non-smokers must inevitably perish from competing causes of death. The health harms of lifelong smoking are among the most widely accepted scientific facts of modern life, yet a cold-eyed look at the scale of entire populations suggests that health costs savings will be in the form of medium term (viz., the next 30-50 years) opportunity costs.

Opportunity costs may be a moving target, but they are real costs, with social consequences. Reducing costs that are constructed as 'tobacco attributable' produces real savings, though they must to varying degrees be temporary, by the nature of ageing, morbidity and mortality which, while not immutable, do stand as ultimate

limitations somewhere short of immortality. This is usually captured by concepts like "increased longevity" [Taylor et al, 2002], 'compression of morbidity' [Nusselder et al, 2000] and 'disability-adjusted life years' [Barendregt, 1997, *op cit*], measures and concepts that construct the real pay-offs of improving health by reducing factors conducive to illness and physical limitation. Health authorities will therefore always have economic, in addition to political, motivations for intervening to reduce, control or otherwise manage addictions linked to harm, for the population, or in governmentality terms, re-incitement to modify health-related behavior.

But for individuals, these targeted activities will at the same time continue to be viewed as matters of personal costs and benefits, founded in differing values, with different trade-offs, thus inevitably creating and maintaining an irreducible interplay of motivations and cross-purposes relative to interventions by health authorities. This in turn will mean a constantly shifting mix of failed, as well as successful, outcomes, a reminder perhaps that reducing harm is a more plausible policy goal than perpetually failing to eliminate harm altogether.

> "The aim of prevention is to spare people from avoidable misery and death, not to save money on the health care system. In countries with low mortality, elimination of fatal diseases by successful prevention increases health care spending because of the medical expenses during added years of life" [Barendregt et al, 1997; Bonneux et al, 1998].

The pay-off from tobacco control biopolitics is not ultimately an economic one,[24] but healthier, more disability-free life for more people [K.E. Warner, 1987]. This 'imperative of health' runs up against the inconvenient truth that the medium term healthier outcomes from controlling tobacco will inevitably be differently valued by different individuals.

---

[24] A case has been made that an economic society-level accounting of tobacco is negative, costing in 1991 figures some $15B [Kaiserman, 1997].

> "The use of 'health' to encompass almost all that is worthwhile and valuable ignores the fact that the desire for a long and disease-free life can, and often does, conflict with practices which makes us feel like we are doing more than merely existing." [Keane, 2002:109]

Thus does perceived 'well-being' clash with the underlying biological enabling resource called 'health'. This more traditional, perhaps pre-modern view persists and is embodied by the continuance of many 'bad habits', of which smoking has become one of the most stigmatized.

The broad acceptance of tobacco control is a facet of modern consumer society's healthism, in the eyes of some an ideology, but also an ideal that enables a permissive mandate for the changing of social norms in the name of health, most notably the denormalization of smoking. In a society whose political and economic goals are grounded in assumptions of extending longevity, the cigarette for all its initial modernity [Brandt, 2007], even in its alleged sublimity [Klein, 1993], is a harmful anomaly. Controlling tobacco is the price smoker subjectivity pays to risk governance in a society that places a premium on maximizing life expectancy.

Beyond 'controlling tobacco'[25] : Civilizing nicotine?

The unprecedented momentum of the anti-smoking (and increasingly 'anti-tobacco') movement in public health can succeed in reducing harm, but nicotine addicts are here to stay. A consumer society governed through an uneasy amalgam of neo-liberal and welfare state premises provides fertile ground for self-management through the use of non-intoxicating substances. Among these, nicotine, whether as a medicinal or smokeless recreational product, notwithstanding all the demonization of tobacco, seems

[25] To make what may at first seem a rather fine distinction, there is no equivalent 'beyond tobacco control': the toxicity and addiction liability of tobacco and nicotine makes their formal (and informal) regulation a signature achievement of the anti-smoking movement, a permanent fixture of a consumer society of regulated risks and risk-managing citizens. By unanimous ruling, the Supreme Court of Canada found the federal *Tobacco Act* to be constitutional [June 28, 2007]. The suggested 'civilizing' of nicotine could not be achieved in the absence of regulation.

likely to join the ranks of pharmaceutical aids to the mood management of everyday life. When time, effort and predispositions are considered together in this context, the citizen under the sign of consumption produces his or her own satisfaction [Foucault, 1978-79/2008: 226, 236]

Changes in governmentality can readily be discerned around tobacco, both how its use is regulated and how smokers' subjectivities have been shaped, whether as social pariahs (guilty, resentful or defiant) or have been reformed, as smokers have sought diligently to re-fashion themselves as non-smokers, a negative identity project for which health authorities, moralizers and changed expectations of public behaviour across the body politic offer both positive and negative reinforcement. Implicitly, the subjectivities of non-smokers have also been shaped, changing their expectations and tolerances for tobacco smoke and in some cases for smokers themselves.

From the celebratory 'quit to win' to the co-optive policing of 'up to $5,000 fine to bar owner for permitting smoking by customers on the premises', smokers are challenged and channelled to change and all to different degrees respond, whether with liberatory self-transformation, grudging change to accommodate or varying degrees of passive and active resistance. Governing through freedom to change the perception and social acceptability of a legally available substance, product and behaviour has required a combination of the construction and dissemination of expert risk knowledge, the mobilization of a wide range of non-state actors linked to state-sponsored programs, a degree of moral regulation and moralization, as well as the provision of authoritative advice for the re-formulation of personal identity in relation to smoking status.

The outcome has seen a reconstitution of the smoker as a subject. The 'non-smoker' is not exactly a new social category [Hacking 1986], but the smoker has been re-configured and an otherwise normal social identity re-framed through the renunciation of smoking and a subtle, but pervasive reconstruction of social relations. The former smoker faces the expectations of others to manage mood and social identity in the

absence of a visible prop whose characteristics impinge on the sensibilities and risk perceptions of others.

In this societal project, the shifting concept of addiction plays a central role, ranging from responsibilizing manufacturers in terms of legal liability to guiding the increasingly tailored advice proffered on smoking cessation. In between, for smokers addiction stands as an ambivalent marker, stigmatizing and pathologizing despite the pleasurability and potentially therapeutic uses of nicotine [Henningfield, 1994], but also offering some smokers an exculpatory, somatic 'out', in the form of a self-concept organized under the neurochemical gaze of modern brain science [N. Rose, 2010].

No matter how the addiction concept is constructed, it is real in its consequences. Constructing it neurochemically and genetically may be the most compelling means of constructing addiction for explaining dependence between persons and substances (tobacco included) to date. Still, this scientificity uncovers both new strength and new weaknesses in the addiction concept. On the one hand, addiction may be strengthened, a more formidable foe for the addict to the extent that it is understood in brain chemistry, metabolism and genetic terms. On the other hand, constructing addiction in molecular terms, opening the brain's 'black box', while it re-inscribes addiction as pathology, does not negate traditional notions like willpower. Moreover, even in its own terms, neuroscience is faced with the conundrum of having uncovered the molecular wellsprings of voluntary and involuntary behaviors at the same time, powered by the same "reward pathways" [Hyman, 2007; Kalant 2009].

This natural science construction of addiction holds the potential for discovering or inventing new pharmaceutical means for managing addiction. Some may hope for a 'cure' by these means. However, it seems more likely that, from the stubborn underlying and multi-faceted human features of dependence behaviour in historically contingent social contexts, in some fundamental ways addiction as a neurochemical construct may be no more susceptible to a strictly pharmaceutical cure than would addiction constructed in other ways and times. An essentially contestable concept,

addiction its full human dimensions of neurochemistry, psychology, social status and social location factors, ethicality and spirituality will always pose a challenge. Not an unvarying challenge, but one that will of necessity differ in detail and manageability for the self-produced neo-liberal individual compared to other kinds of citizens produced under other politico-ethical assumptions.

Despite the measurable progress in public health terms, the modern consumer ethic continues to be characterized by a dualistic conception whereby consumption provides a medium both for self-control and self-expression. Modern practices of consumption, particularly in the emerging context of neo-liberal governance, act concurrently as both "a medium of self-expression and a form of self-control" [Reith, 2007: 40 and more generally, Bell, 1976]. Tobacco consumption practices (dominated for decades by smoking, the most efficient psychoactive pathway to the brain) partake of both these imperatives, being at one and the same time forms of self-expression *and* means of self-control. In terms of consumer society *zeitgeist* then, nicotine use in a variety of forms, smoking included, seems likely to persist, almost as highly a functional fit to late modernity as social drinking.

Dismissing utopian projections forecasting an end to tobacco, or even of smoking, the interesting question is one of governmentality: the governance of nicotine in various forms and the associated nicotine subjectivities. This is the terrain of contestation and accommodation both for the increasingly marginalized visible smoker and for the invisible nicotine addict. Both are increasingly produced as neurochemical selves, but with different and possibly diverging social fates.

CITATIONS/ REFERENCES

Abi-Rached, JM, 'The birth of the neuromolecular gaze', *History of the Human Sciences* 2010, 23(1): 11-36

Acker, CJ,'Stigma or legitimation? A historical examination of the social potentials of addiction disease models', *Journal of Psychoactive Drugs* 1993, 25(3): 193-205

Alamar, B & Glantz, SA, 'Effect of increased social unacceptability of cigarette smoking on reductions in cigarette consumption, *American Journal of Public Health*, 2006, 96(8): 1359-1363

Alesci, N et al, 'Smoking visibility, perceived acceptability and frequency in various locations among students and adults', *Preventive Medicine* 2003, 36(3): 272-281

Armstrong, D, *Political Anatomy of the Body: Medical Knowledge in Britain in the Twentieth Century,* Cambridge University Press, London, 1983

Armstrong, D, 'Origins of the problem of health-related behaviours: A genealogical study', *Social Studies of* Science, 2009, 39(6): 909-926

Augustson, EM & Marcus, SE, 'Use of the current population survey to characterize subpopulations of continued smokers: A national perspective on the 'hardcore' smoker', *Nicotine & Tobacco Research*, August, 2004, 6(4): 621-629

Bailey, L, 'Control & desire: The issue of identity in popular discourses of addiction', *Addiction Research & Theory*, December, 2005, 13(6): 535-543

Ballantyne, C, 'What is third-hand smoke: Is it hazardous?', *Scientific American*, January 6, 2009

Barendregt, JJ, Bonneux, L & van der Maas, P, 'The health care costs of smoking, *New England Journal of Medicine,* October 9, 1997, 337(15): 1052-57

Barry, A, Osborne, T & Rose, N, *Foucault & Political Reason: Liberalism, Neo-Liberalism & Rationalities of Government*, University of Chicago Press, 1996

Bayer, R & Stuber, J, 'Tobacco control, stigma & public health: Re-thinking the relations', *American Journal of Public Health* January 2006, 96(1): 47-50

Bell, D, *The Cultural Contradictions of Capitalism*, Basic Books, New York, 1996

Bell, K et al, 'Smoking, stigma & tobacco 'denormalization': Further reflections on the use of stigma as a public health tool', *Social Science & Medicine,* March, 2010, 70(6): 795-99

Benowitz, N, *Nicotine Safety & Toxicity*, Oxford University Press, London, 1998

Berlivet, L, 'Association or causation? The debate on the scientific status of risk-factor epidemiology', pp.39-74 in Virginia Berridge (ed), *Making Health Policy: Networks in Research & Policy Since 1945,* Editions RODOPI, BV (Wellcome Trust/Clio Medica 75), Amsterdam -New York, 2005

Berridge, V, 'Dependence: Historical concepts & constructs', pp.1-18 in Griffith Edwards & Malcolm Lader, (eds), *The Nature of Drug Dependence*, Society for the Study of Addiction Monograph 1, Oxford University Press, London, 1990

Berridge, V, 'Two tales of addiction: Opium & nicotine', *Human Psychopharmacology* 1997, 12(Suppl): s45-s52

Berridge, V, 'Science & policy: The case of post-war British smoking policy', pp.143-163 in Stephen Lock, Lois Reynolds & EM Tansey (ed), *Ashes to Ashes: The History of Smoking & Health*, Editions RODOPI BV (Wellcome Institute/Clio Medica 46), Amsterdam-Atlanta, 1998

Berridge, V, 'Passive smoking and its pre-history in Britain: Policy speaks to science?', *Social Science & Medicine,* 1999, 49: 1183-1195

Berridge, V, 'Altered states: Opium & tobacco compared', *Social Research*, 2001, 68(3): 655-676 (Special Issue on 'Altered States of Consciousness')

Berridge, V, 'Changing places: Illicit, drugs, medicines, tobacco & nicotine in the 19th and 20th centuries', pp. 11-34 in M. Gijswijt-Hofstra, GM van Hereran & EM Tansey (eds), *Biographies of Remedies: Drugs, Medicines & Contraceptives in Dutch & Anglo-American Healing Cultures,* Editions RODOPI BV (Wellcome Trust/Clio Medica 66), Amsterdam-Atlanta, 2002

Berridge, V, 'Post-war smoking policy in the UK and the re-definition of public health', *Twentieth Century British History* 2003, 14(1): 61-82

Berridge, V (ed), *Making Health Policy: Networks in Research & Policy After 1945,* Editions RODOPI BV (Wellcome Trust/Clio Medica 46), Amsterdam-New York, 2005

Berridge, V, (ed), *Marketing Health: Smoking & the Discourse of Public Health in Britain, 1945-2000,* Oxford University Press, London, 2007

Berridge, V & Loughlin, K (eds), *Medicine, the Market & the Mass Media,* 'Introduction' by Berridge & Loughlin (pp.1-16), Routledge, London, 2005

Berridge, V & Loughlin, K, 'Smoking & the new health education in Britain 1950s-1970s', *American Journal of Public Health* June, 2005, 95(6): 956-964 ('Public Health Then & Now')

Berridge, V & Hickman, T, 'History & future of psychoactive substances', pp.467-483 in D. Nutt et al (eds), *Drugs & The Future: Science, Addiction & Society (Foresight Project UK: Brain Science, Addiction & Drugs),* Foresight Institute, London, 2007

Bongaarts, J, 'How long will we live?', *Population & Development Review,* December 2006, 32(4): 605-628

Bonneux, L, Nusselder, W & van der Maas, J, 'Preventing fatal diseases increases health care costs: Cause elimination & life table approach', *British Medical Journal* January 3, 1998, 316: 26-29

Botvin, GJ et al, 'The false consensus effect: Predicting adolescents' tobacco use from normative expectations', *Psychological Reports* 1992, 70: 171-178

Brandt, AM, 'The cigarette, risk & American culture', *Daedalus* Fall, 1990, 119(4): 155-176

Brandt, AM, *The Cigarette Century: The Rise , Fall & Deadly Persistence of the Product that Defined America,* Basic Books, New York, 2007

Brandt, AM & Rosin, P (eds), *Morality & Health*, Rutledge, London, 1997

Britton, J, 'Poor smokers do not get help', BBC News, June 25, 2004: http://news.bbc.co.uk/2/hi/health/3832909.stm

Bunton, R et al, 'The stages of change model in health promotion: Science & ideology', *Critical Public Health*, 2000, 10(1): 55-70

Burchell, G & Gordon, PM (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, 1991

Burnham, JC, *Bad Habits: Drinking, Smoking, Taking Drugs, Swearing, Gambling & Sexual Misbehavior*, New York University Press, NY, 1993

Burns, D et al, 'Population-based smoking cessation: Proceedings of a Conference on 'What Works to Influence Cessation in the General Population?', *NCI Monograph 12*, Washington, DC, 2000

Canada (Minister of Public Safety/RCMP), *Report on the Status of the Contraband Tobacco Situation in Canada,* Ottawa, July 2009 (11pp mimeo), Available on-line: http://www.rcmp-grc.gc.ca/ce-da/tobac-tabac/stats-eng.htm

Carmody, TP, 'Nicotine dependence: Psychosocial approaches to the prevention of smoking relapse', *Psychology of Addictive Behaviors* 1993, 7(2): 96-102

Cerny, EH & Cerny, T, 'Anti-nicotine abuse vaccines in the pipeline: An update', *Expert Opinion on Investigational Drugs,* May 2008, 17(5): 691-696

Chaiton, JC, Cohen, J & Frank, J, 'Population health & the hard core smoker: Geoffrey Rose revisited', *Journal of Public Health Policy* 2008, 29: 307-318

Chandler, WU, *Banishing Tobacco*, Worldwatch paper #68, Worldwatch Institute, Washington, DC, January 1986 (47pp)

Chaloupka, F & Warner, KE, *The Economics of Smoking*, National Bureau of Economic Research (NBER), Working Paper #W7047, March, 1999: http://www.nber.org/info.html

Clayton, R, Segress, MJH & Caudill, CA, 'Sensation seeking: A commentary', *Addiction* 2007, 102(Suppl.2): s92-s94

Coburn D, 'Beyond the income inequality hypothesis: Class, neo-liberalism & health inequalities', *Social Science & Medicine*2004, 58:41-56

Commission of Inquiry into the Non-Medical use of Drugs (LeDain Commission), *Final Report,* Information Canada, Ottawa, 1973.

Conlin, M, 'Get healthy…Or else: Inside one company's all-out attack on medical costs', *Business Week* February 26, 2007: 58-69 (Cover Story)

Conrad, P, 'Wellness as a virtue: Morality & the pursuit of health', *Culture, Medicine & Psychiatry* September, 1994, 18(3): 385-401

Cornuz, J et al, 'A vaccine against nicotine for smoking cessation: A randomized controlled trial', *PLoS ONE* 2008, 3(6): e2547; doi: 2510.1371/journal.pone.0002547

Courtright, D, 'Mr. ATOD's wild ride: What do alcohol, tobacco & other drugs have in common?', *Social History of Alcohol & Drugs* Fall 2005, 20(1):105-140

Crawford, R, 'Healthism: The medicalization of everyday life', *International Journal of Health Services* 1980, 10(3): 365-388

Cruikshank, B, 'Revolutions within: Self government & self-esteem', *Economy & Society* 1993, 23(3): 326-344

Cunningham, R, *Smoke & Mirrors: The Canadian Tobacco Wars,* IDRC, Ottawa 1996

Cunningham, JA & Selby, P, 'Implications of the normative fallacy in young adult smokers aged 19-24 years', *American Journal of Public Health,* August 2007, 97(8): 1399-1400

Daube, M, 'Stamp out cigarettes by 2050', posted to web site: www.http://news.curtin.edu.au, [Ann Marie Lim ('Major award for leading tobacco campaigner')]

Davies, JB, *The Myth of Addiction*: *An Application of the Psychological Theory of Attribution to Illicit Drug Use,* Harwood Academic, Switzerland, 1992

Davis, RM, Wakefield, M & Gupta, P, 'The hitchhiker's guide to tobacco control: A global assessment of harms, remedies & controversies', *Annual Review of Public Health* 2007, 28: 171-194

Daynard, R, 'Doing the unthinkable (and saving millions of lives)', *Tobacco Control* 2009, 18: 2-3

Dean, M, *Governmentality: Power & Rule in Modern Society*, SAGE, London, 1999 (2004)

Dagenhardt, L & Hall, W, 'The relationship between tobacco use, substance abuse disorders & mental health: Results form the [Australian] National Survey of Mental Health & Well-Being', *Nicotine & Tobacco Research* January 2001, 393): 225-234

DiClemente, C & Prochaska, J, 'Self-change & therapy: Change of smoking behavior', *Addictive Behaviors* 1982, 7: 133-142

DiFranza, J et al, 'Susceptibility to nicotine dependence: The Development & Assessment of Nicotine Dependence in Youth, 2 Study', *Pediatrics*, 2007, 120: e974-e983

Doll, R (Sir), 'The first reports on smoking & lung cancer' pp.130-142 in S Lock, LA Reynolds & EM Tansey (eds), *Ashes to Ashes: : The History of Smoking & Health*, Editions RODOPI BV (Wellcome Institute/Clio Medica 46), Amsterdam-Atlanta, 1998 (a)

Doll, R (Sir), 'Uncovering the effects of smoking: Historical perspective', *Statistical Methods in Medical Research* 1998 (b), 7:87-117

Douglas, M, *Purity & Danger: An Analysis of the Concepts of Pollution & Taboo,* Routledge, London, 1966 (2003)

Doyle, YG & Furey, F, 'Sick individuals & sick populations: 20 years later', *Journal of Epidemiology & Community Health* 2006, 60: 396-98

Drobes, DJ & Klein, LC, 'Research on nicotine & tobacco: A decade of progress', *Nicotine & Tobacco Research* 2004, 6(4): 695-741

Edwards, G & Raw, M, 'The tobacco habit as drug dependence', *(British Journal of) Addiction*1991, 86: 483-84

Eiser, JR & van der Pligt, J, 'Attitudinal and social factors in adolescent smoking: In search of peer group influence', *Journal of Applied Social Psychology* 1984, 14(4): 348-363

Ericson, RV & Doyle, A (eds), *Risk & Morality*, University of Toronto Press, Toronto, 2003

Farkas, AJ et al, 'Addiction versus stages of change models in predicting smoking cessation', *Addiction* 1996, 91(9): 1271-1280

Farrimonde HR & Joffe, H, 'Pollution, peril & poverty: A British study of the stigmatization of smokers', *Jnrl Comm & Applied Soc Psych* 2006, 16: 481-491

Feldman, EA & Bayer, R, *Unfiltered: Conflicts Over Tobacco Policy & Public Health*, Harvard University Press, Cambridge, MA, 2004

Ferentzy, P, 'From sin to disease: Differences & similarities between past & current conceptions of chronic drunkenness', *Contemporary Drug Problems* Fall 2001, 28:363-389

Fiore, M, Bailey, W, Cohen, SJ et al, *Treating Tobacco Use & Dependence: Quick Reference Guide for Physicians*, USDHHS, Rockville, MD, 2000

Fong, GT et al, 'the near universal experience of regret among smokers in four countries: Findings from the International Tobacco Control Policy Evaluation Survey', *Nicotine & Tobacco Research,* December 2004, 6(Suppl.3): s341-s351

Foucault, M, *History of Sexuality: Volume I (The Will to Knowledge): An Introduction*, (Translator: Robert Hurley), Pantheon, New York, 1978 [original in French, 1976 Editions Pleiade]

Foucault, M, pp. 208-210 in Hubert Dreyfus & Paul Rabinow (eds), *Michel Foucault: Beyond Structuralism & Hermeneutics*, University of Chicago Press

Foucault, M, *Power/Knowledge: Selected Interviews & Other Writings 1972-1977*, Colin Gordon (ed), Harvester Press/Pantheon/Random House Books, New York, 1980

Foucault, M, *Technologies of the self: A Seminar with Michel Foucault,* LH Martin, H Gutman & PH Hutton (eds), University of Massachusetts Press, 1988

Foucault, M, 'Governmentality', pp.87-104 in G. Burchell, C. Gordon (eds), *The Foucault Effect: Studies in Governmentality*, University of Chicago Press, 1991

Foucault, M, 'About the beginnings of the hermeneutics of the self', *Political Theory* 1993, 2192):198-227

Foucault, M, *Security, Territory, Population: Lectures at the College de France 1977-1978,* N. Senellart, F. Ewald, A Fontana, AI Davidson (eds), Translator: Graham Burchell, Palgrave MacMillan, London, 2007

Foucault, M, *The Birth of Biopolitics: Lectures at the College de France 1978-1979,* Translator: Graham Burchell, Palgrave MacMillan, London, 2008

Fox, NJ, *Postmodernism, Sociology & Health*, University of Toronto Press, 1994, Toronto

Frohlich, K & Potvin, L, 'The inequality paradox: The population approach & vulnerable populations', *American Journal of Public Health* February 2008, 98(2): 216-221

Galbraith, JW & Kaiserman, MJ, 'Taxation, smuggling & demand for cigarettes in Canada: Evidence from time series data', *Journal of Health Economics* 1997, 16(3): 287-301

Gallie, WB, 'Essentially contested concepts', *Proceedings of the Aristotelian Society* March 12, 1956: 167-198

Garland, D, 'The rise of risk' pp. 48-86 in Ericson & Doyle (eds), *Risk & Morality*, University of Toronto Press, Toronto, 2003

Gartner,CE, Barendregt,JJ & Hall,WD, 'Predicting the future prevalence of smoking in Australia. 'How low can we go and by when?', *Tobacco Control* 2009, 18(3): 183- 189

Gervais, A et al, 'Milestones in the natural course of onset of cigarette use among adolescents', *Canadian Medical Association Journal* 2006, 175(3): 255-261

Gibbins, R & Youngman, L, *Mindscapes: Political Ideology Towards the 21st Century*, MacGraw-Hill Ryerson Canada, Toronto, 1996

Gilbert, DG, *Smoking: Individual Differences, Psychopathology & Emotion,* Taylor & Francis, London, 1995

Glantz, SA, Slade, J, Bero, L, Hanauer, P & Barnes, D (eds), *The Cigarette Papers*, University of California Press, San Francisco, 1996

Glassner, B, 'Fitness & the postmodern self', *Journal of Health & Social Behavior* June 1989, 30: 180-191

Greco, M, 'Psychosomatic subjects and the 'duty to be well: Personal agency within', *Economy & Society* August 1993, 22(3): 357-372

Gusfield, J *The Culture of Public Problems: Drinking-Driving & the Symbolic Order,* University of Chicago Press, 1981

Hacking, I, *Historical Ontology*, Harvard University Press, Cambridge, MA, 2002 [pp. 99-114, 'Making Up People' (1986)]

Hanninen, V & Koski-Jannes, A, 'Narratives of recovery from addictive behaviours', *Addiction* 1999, 94(12): 1837-1848

Hansard Canada, House of Commons Debates, 1904-1908: 9th Parliament (4thSession) to 10th Parliament, 4th Session (4), *passim*

Hare, TA & Camerer, C, 'Self-control in decision-making involves modulation of the ventromedial prefrontal cortex valuation system', *Science* 2009, 324(5927): 646-648

Health Disparities Task Group (of the F/P/T Advisory Committee on Population Health & Health Security), accessible at: http://phac-aspc.gc.ca/ph-sp/disparities/pdf06/disparities_discussion_paper_e/pdf, 31pp, December, 2004, Cat.No. HP5-4/2005, Minister of Health, Ottawa

Heishman, SJ, 'Behavioral & cognitive effects of smoking: Relation to nicotine', *Nicotine & Tobacco Research* 1999, 1(Suppl.2): s143-s147

Henningfield, JE, 'Do the benefits of nicotine help cigarettes beat the addiction rap?', *Addiction*1994, 89(2): 135-136

Henningfield, JE & Heishman, SJ, 'The addictive role of nicotine in tobacco use', *Psychopharmacology* 1995, 117: 11-13

Hertzman, C, 'Health & human society', *American Scientist* November/December 2001, 89(6): 538-545

Hickman, TA, 'Mania Americana: Narcotic addiction and modernity in the US, 1870-1920', *Journal of American History* March, 2004: 1269-94

Hilton, M & Nightingale, S, 'A microbe of the Devil's own make': Religion and science in the British anti-tobacco movement, 1853-1908', pp.41-77 in Lock, Reynolds & Tansey (eds), *Ashes to Ashes: History of Smoking & Health,* Editions RODOPI BV (Wellcome Institute/Clio Medica 46), Amsterdam-Atlanta, 1998

Holden, C, 'Behavioral addictions; Do they exist?, *Science,* November 2, 2001, 294: 980-982

Hooker, C & Chapman, S, 'Our youth must be protected: Talking tobacco control in the New South Wales Parliament from the 1960s to the 21st century', *Health & History* 2007, 9(1): 106-128

Howland, M & Ramesh, M, *Studying Public Policy: Policy Cycles & Sub-Cycles*, Oxford University Press, Toronto 1995, 2003

Hughes, J, *Learning to Smoke: Tobacco Use in the West*, University of Chicago Press, Chicago Ill., 2003 [Jason Hughes, Leicester University, UK]

Hughes, JR, 'Why does smoking so often lead to dependence: A somewhat different view', *Tobacco Control,* March 2001, 10: 62-64 [John R. Hughes, University Vermont]

Hunt, A, 'Moral regulation and the making of the new person: Putting Gramsci to work', *Theoretical Criminology* 1997, 1(3): 275-310

Hunt, A, *Governing Morals: A Social History of Moral Regulation,* Oxford University Press, London, 1999

Hunt, A, 'Risk & moralization in everyday life', pp.165-192 in Ericson & Doyle (eds), University of Toronto Press, Toronto, 2003

Hyman, SE, 'The neurobiology of addiction: Implications for voluntary control of behavior', *American Journal of Bioethics* 2007, 7(1):8-11

Inglehart, R & Welzel, C, *Modernization, Cultural Change & Democracy: The Human Development Sequence*, Cambridge University Press, London, 2005

Jackson, N & Prebble, A, *Perceptions of Smoking Cessation Products & Services Among Low Income Smokers,* Nation Health Service/Health Development Agency, London, 2002 (16pp mimeo); www.http://nice.org.uk

Jarvis, MJ, Wardle, J & Owen, L, 'Prevalence of hardcore smoking in England, and associated attitudes & beliefs', *British Medical Journal* May 17, 2003, 326: 1061 (5pp: BMJ on-line)

Jha, P & Chaloupka, F (eds), *Tobacco Control in Developing Countries,* Oxford University Press, London/Toronto, 2000
Kaiserman, MJ, 'The cost of smoking in Canada: 1991', *Chronic Diseases in Canada*, 1997, 18(1): 12pp

Kalant, H, 'What neurobiology cannot tell us about addiction', *Addiction* May 2009, 105: 780-789 (including invited commentaries)

Kalman, D, 'A model awaiting validation (Stages of Change)', *Nicotine & Tobacco research August 2004, 6(4): 693-94*

Katz, S, 'Secular morality', pp.297-330 in Brandt, AM & Rozin, P (eds), *Morality & Health,* Routledge, London, 1997

Keane, H, *What's Wrong with Addiction?,* Melbourne University Press, Melbourne, 2002

Kessler, D, *The End of Overeating: Taking Control of America's Insatiable Appetite*, Rodale Press/McCLelland & Stewart, Toronto, 2009

Kessler, G, 'Final Opinion: Summary of Findings Against the Tobacco Industry', Civil Action #99-2496 (GK), USA *vs* Philip Morris, August 17, 2006

Klein, R, *Cigarettes Are Sublime*, Duke University Press, Durham, North Carolina, 1993

Kluger, R, *Ashes to Ashes: America's Hundred Year Cigarette War, the Public Health & the Unabashed Triumph of Philip Morris*, Knopf, New York, 1997

Koop, EC, 'The quest for a smoke-free young America by the year 2000', Journal of School Health 56(1), January 1986, 56(1): 8-9. More generally, see *Tobacco, Second-Hand Smoke and the Campaign for a Smoke-Free America*, Profiles in Science, the C. Everett Koop Papers; http://profiles.nim.nih.gov, accessed May 24, 2010.

Kozlowski et al, 'Comparing tobacco cigarette dependence with other drug dependencies: Greater or equal 'difficulty quitting' and 'urges to use', but 'less pleasure' from cigarettes', *JAMA* February 10, 1989, 261(6):898-901

Krogh, D, *Smoking: The Artificial Passion*, WH Freeman, San Francisco, 1991

Kuhn, TS, *The Structure of Scientific Revolutions*, University of Chicago, 1962, 1996

Kuukanen, JM, 'Making sense of conceptual change', *History & Theory* 2008, 47(3): 351-372

Leary, MR & Kraxberger, LRT, 'Self-presentation can be hazardous to your health: Impression management & health risk', *Health Psychology* 1994, 13(6): 461-470

Leatherdale, S & Ahmed, MK, 'Marijuana use by smokers and non-smokers: Who's smoking what?', *Canadian Medical Association Journal* 2006, 174(10): 1399 (1pp)

Lee, DS et al, 'Trends in risk factors for cardiovascular disease in Canada: Temporal, socio-demographic & geographic factors', *Canadian Medical Association Journal* August 4, 2009, 181(3-4), E55-E66

Leiss, W, *In the Chamber of Risks: Understanding Risk Controversies*, McGill-Queen's Press, Montreal-Kingston, 2001

Levine, HG, 'The discovery of addiction: Changing conceptions of habitual drunkenness in America', *Journal of Studies on Alcohol [& Drugs],* March 1978, 39(3): 143-174

Levy, D et al, 'Modelling the impact of smoking-cessation treatment policies on quit rates', *American Journal of Preventive Medicine*, March, 2010, 38(3- Suppl): s364-s372

Link, B, 'Epidemiological sociology & the social shaping of population health', *Journal of Health & Social Behavior* December, 2008, 49: 367-384

Link, B & Phelan, J, 'Social conditions as fundamental causes of diseases', *Journal of Health & Social Behavior* 1995 (Extra Issue): 80-94

Lipset, SM, *Continental Divide: Political Values of the US & Canada,* Routledge, New York, 1990

Loewenstein, G, 'Out of control: Visceral influences on behavior', *Organizational Behavior & Human Decision Processes* 1996, 65(3): 272-292

Loewenstein, G, 'A visceral account of addiction', pp.235-263 in Elster, J & Skog, O-J (eds), *Getting Hooked: Rationality & Addiction*, Cambridge University Press, Cambridge, UK, 1999

Lung Association (The), *Making QUIT Happen*, brochure, Ottawa, 24pp (mimeo), 2008

Lupton, D, *The Imperative of Health: Public Health & the Regulated Body,* SAGE, 1995

Lynch, BS & Bonnie, RJ, *Growing Up Tobacco Free: Preventing Nicotine Addiction in Children & Youths*, Institute of Medicine, National Academy Press, Washington, DC, 1994

Lynch, J & Kaplan, GA, 'Why do poor people behave poorly?: Variation in adult health behaviors & psychosocial characteristics by stages of the socio-economic status (SES) life-course', *Social Science & Medicine* 1997, 44: 809-819

Mao, Y et al, "Socioeconomic status & lung cancer risk in Canada', *International Journal of Epidemiology*2001, 30: 809-817

Marcus, S et al (eds), *Phenotypes & Endophenotypes: Foundations for Genetic Studies of Nicotine Use & Dependence*, National Cancer Institute (NCI) Monograph #20, July, 2009, Washington, DC

Marmot, M, 'Risk factors or social causes?', *International Journal of Epidemiology* 2004, 33: 297-98

Marmot, M, *The Status Syndrome: How Social Standing Affects Your Health & Longevity*, Times Books, New York, 2004

Mauss, M, 'Techniques of the body' (1934, in French), pp.455-477 in Crary, J & Kwinter, S (eds) *Incorporations,* Zone Books, MIT Press, Cambridge, MA, 1992 (out of print)

McLaren, L, 'Addiction addiction: Welcome to a culture in which heavy lip-balm use can earnestly be compared to being hooked on heroin', Globe & Mail Column, January 15, 2000.

McCracken G, 'Smoking culture: The real benefits of smoking & the true cost of quitting' (22pp mimeo), Prepared for Health Canada, Health Promotion & Programs Branch, Tobacco reduction Division, Ottawa 1998

McGinnis, J & Foege, W, 'Actual causes of death in the US', *JAMA* November 10, 1993, 270(18): 2207-2212

Mendez, DW & Warner, KE, 'Setting a challenging yet realistic smoking prevalence target for 'Healthy People 2010': Learning from the California experience', *American Journal of Public Health* March 2008, 98(3): 556-559

Merriman, D, *Understand, Measure & Combat Tobacco Smuggling* in World Bank Economics of Tobacco Tool-Kit, Tool #7 (Yurekli, A & de Beyer, J, eds.), 58pp, Geneva; www.http://worldbank.org/tobacco/smuggling (undated)

Midanik, LT, *Biomedicalization of Alcohol Studies: Ideological Shifts & Institutional Challenges,* Transaction Book, New Brunswick, New Jersey, 2006

Miller, P & Rose, N, *Governing the Present: Administering Economic, Social & Personal Life,* Polity Press, London, 2008

Minian, N et al, *Impact of the Smoking Cessation System on Young Male Smokers,* Ontario Tobacco Research Unit (OTRU), March 2010, Toronto (55pp).

Mokdad et al, 'Actual causes of death in the US: 2000', *JAMA* 2004, 291: 1238-1245

Morisano, D et al, 'Mechanisms underlying the comorbidity of tobacco use in mental health & addictive disorders', *Canadian Journal of Psychiatry*, June 2009, 54(6): 356-367

Nathanson, C, 'Social movements as catalysts for policy change: The case of smoking & guns', *Journal of Health Politics, Policy & Law*, June 1999, 24(3): 421-488

Nathanson, C, *Disease Prevention as Social Change: The State, Society & Public Health in the US, France, Great Britain & Canada,* SAGE, 2007

National Association of Attorneys General (NAAG), Project Tobacco – Master Settlement Agreement, November 1998. http://www.naag.org/backpages/tobacco/mas, accessed May 24, 2010

National Commission on Marihuana & Drug Abuse (Schafer Commission), *Drug Use in America: Problem in Perspective*, Superintendent of Documents, Washington, DC, March 1973

Nesse, R & Berridge, K, 'Psychoactive drug use in evolutionary perspective', *Science* October 3, 1997, 278: 63-66

Nevitte, N, *Decline in Deference: Canadian Values Change in Cross National Perspective,* Broadview Press, Peterborough, Canada, 1996

Novas, C & Rose, N, 'Genetic risk & the birth of the somatic individual', *Economy & Society* 2000, 29: 485-513

Nusselder, WJ et al, 'Smoking and the compression of morbidity', *Journal of Epidemiology & Community Health*, 2000, 54: 566-574

Ontario Medical Association (OMA), *Rethinking Stop Smoking Medications,* Position Paper, January 18, 2008, 13pp (mimeo); www.http://oma.org/health/tobacco/myths

Osborne, T, 'Sociology, liberalism and the historicity of conduct', *Economy & Society*, November 1994, 23(4): 484-501

Ostrow, N, 'The dangers of third-hand smoke', *Bloomberg Business Week,* February 9, 2010; www.bloomberg/business week/lifestyle/content/feb2010-05-03

Pal, L, *Beyond Policy Analysis: Public Issue Management in Turbulent Times,* International Thomson Publishers/Nelson, Scarborough, 1997

Parascandola, M, 'Skepticism, statistical methods & the cigarette: A historical analysis of a methodological debate', *Perspectives in Biology & Medicine* 2004(a), Spring 27(42): 244-261

Parascandola, M, 'Two approaches to etiology: The debate over smoking & lung cancer in the 1950s', *Endeavour* June, 2004(b), 28(2): 81-86

Pennock, P, *Advertising Sin & Sickness: The Politics of Alcohol & Tobacco Marketing 1950-1990,* Northern Illinois Press, DeKalb, Ill, 2007

Perkins, KA, 'Chronic tolerance to nicotine in humans and its relationship to tobacco dependence', *Nicotine & Tobacco Research* 2002, 4: 405-422

Petersen, A & Lupton, D (eds), *The New Public Health*, SAGE, London, 1996

Phelan, J & Ling, B, 'Controlling disease & creating disparities: A fundamental cause perspective', *Journals of Gerontology, Series 'B', Psychological Sciences/Social Sciences* 2005, 60: 27-33

Pierce, J & Farkas, AJ, 'Beyond stages of change: The quitting continuum measures progress toward successful smoking cessation', *Addiction* 1998, 93(2): 277-286

Poland, B, 'Smoking, stigma & the purification of public space', pp.208-225 in R. Kearns & W. Gesler (eds), *Putting Health Into Place: Landscape, Identity & Well-Being*, Syracuse University Press

Pomerleau, CS, 'Co-factors for smoking & evolutionary psychology', *Addiction* 1997, 92(4): 397-408

Pomerleau, CS & Pomerleau, OF, 'Early experiences with tobacco among women smokers, ex-smokers & never smokers', *Addiction*1998, 93(4): 595-99

Pomerleau, OF, Collins, A & Pomerleau, CS, 'Why some people smoke and others do not: New perspectives', *Journal of Consulting & Clinical Psychology* 1993, 61(5): 723-731

Pomerleau, OF & Pomerleau, CS, 'Euphoriant effects of nicotine in smoking', *Psychopharacology* 1992, 108(3): 460-65

Pomerleau, OF & Hughes, JR, 'With a little help from its friends: A brief history of the Society for Research on Nicotine & Tobacco, *Nicotine & Tobacco Research* 2004, 6(3): 391-95

Prochaska, J & DiClemente, C, 'Stages and processes of self-change of smoking: Toward an integrative model of change', *Journal of Consulting & Clinical Psychology* 1983, 51: 390-395

Prochaska, J et al, 'Stages of change and decisional balance for 12 problem behaviors', *Health Psychology* 1994, 13(1): 39-46

Prochaska, J & Velicer, W, 'The trans-theoretical model of health behaviour change', *American Journal of Health Promotion* 1997, 12(1): 38-48

Proctor, RD, *The NAZI War on Cancer,* Basic Books, New York, 1999

Purvis, T & Hunt, A, 'Discourse, ideology, discourse, ideology, discourse, ideology…', *British Journal of Sociology* 1993, 44(3): 473-499

Raphael, D, 'Grasping at straws: A recent history of health promotion in Canada', *Critical Public Health*, December 2008, 18(4): 483-495

Redmond, WH, 'Product dis-adoption: Quitting smoking as a diffusion process', *Journal of Public Policy & Marketing* Spring, 1996, 15(1): 87-97

Reid, J, Hammond, D & Driezen, P, 'Socio-economic status and smoking in Canada, 1999-2006: has there been any progress on disparities in tobacco use?', *Canadian Journal of Public Health* January/February 2010, 101(1): 73-79

Reinarmen, C, 'Addiction as accomplishment: The discursive construction of disease', *Addiction Research & Theory,* August 2005, 13(4): 307-320

Reith, G, 'Consumption & its discontents: Addiction, identity & the problems of freedom', *British Journal of Sociology,* 2004, 55(2): 283-300

Remennick, L, 'The cancer problem in the context of modernity: Sociology, demography, politics', *Current Sociology* 1998, 46(1) [Entire issue, esp. pp.70-83, 'Is cancer preventable?']

Research Institute for a Tobacco Free Society (RIFTS), Dublin, Republic of Ireland (Office of Tobacco Control/ASH Ireland/Irish Cancer Society), http://www.tri.ie, accessed May 24, 2010.

Rogers, EM, *Diffusion of Innovation*, Free Press, New York, 1962, 1995 (4th Ed'n)

Room, R, 'The cultural framing of addiction', *Janus Head* 2003, 6(2): 221-234

Room, R, 'Addiction concepts & international control', *Social History of Alcohol & Drugs*, Spring, 2006: 276-289

Rose, G, 'Sick individuals & sick populations', *International Journal of Epidemiology* 1984, 14(1):32-38 (reprinted with Commentaries, IJE, 2001, 30: 427-32)

Rose, G & Day, S, 'The population mean predicts the number of deviant individuals', *British Medical Journal* November 3, 1990, 301:1031-1034

Rose, G, Kay-Tee Khaw & Marmot, M, *Rose's Strategy of Preventive Medicine* (Reissued + Commentaries), Oxford University Press, 2008 (1992)

Rose, N, Calculable minds & manageable individuals', *History of the Human Sciences*, 1988, 1(2): 179-200

Rose, N, *Governing the Soul: The Shaping of the Private Self,* Routledge, London, 1989

Rose, N, 'Government & expertise in advanced liberalism', *Economy & Society* August 1993, 22(3): 283-299

Rose, N, 'Expertise & the conduct of government', *Studies in law, Politics & Society* 1994, 14: 359-397

Rose, N, *Powers of Freedom: Reframing Political Thought,* Cambridge University Press, Cambridge, UK, 1999

Rose, N, 'Governing risky brains', *History of the Human Sciences* 2010, 2391):79-105

Rose, N & Miller, P, 'Political power beyond the state: Problematics of government', *British Journal of Sociology* June 1992, 43(2): 173-205

Ross, H, 'Critique of the Philip Morris study of the cost of smoking in the Czech Republic', *Nicotine & Tobacco Research* 2004, 6(1): 181-189

Royal College of Physicians, *Harm Reduction in Nicotine Addiction: Helping People Who Can't Quit: A Report of the RCP Tobacco Advisory Group,* October, 2007, London

Royal Society of Canada, *Tobacco, Nicotine & Addiction/Tabac, Nicotine et Toxicomanie: A Committee Report Prepared at the Request of RSC for Health Protection Branch, Health & Welfare Canada,* August 31, 1989, Ottawa, 37pp; http://tobaccodocuments.org/pm

Rozin, P, 'Moralization' pp.379-402 in Brandt, AM & Rozin, P (eds), *Morality & Health,* Routledge, New York-London, 1997

Rozin, P, 'The process of moralization', *Psychological Science* 1999(a), 10(3): 218-221

Rozin, P & Singh, L, 'The moralization of cigarette smoking in the US', *Journal of Consumer Psychology* 1999, 8(3):321-337

Rudy, J, *The Freedom to Smoke: Tobacco Consumption & Identity,* McGill-Queen's Press, Montreal-Kingston, 2005

Ruonavaara, H, 'Moral regulation: A reformulation', *Sociological Theory*, November 1997, 15(3): 277-293

Rutherford, E, Snider, J & Kaiserman, MJ, 'Last smoker standing: The persistent smoker in Canada', Presentation based on *The Persistent Smoker in Canada: Final Report,* HC-POR-06-744, Millward Brown for Health Canada Project #20209497, March 2007, 12pp (mimeo)

Saffer, H & Chaloupka, F, 'Tobacco advertising: Economic theory & international evidence', *Journal of Health Economics* 2000, 19(6): 1117-1137

Schelling, T, 'Addictive drugs: The cigarette experience', *Science* January 24, 1992, 255: 430-433

Schwartz, S & Diez-Rous, R, 'Commentary: Causes of incidence and causes of cases – a Durkheimian perspective on [G.] Rose', *International Journal of Epidemiology* 2001, 30: 435-439

Sedgewick, EK, 'Epidemics of the will', pp.582-595 in Crary, J & Kwinter, S (eds), *Incorporations,* Zone 6, MIT Press, Cambridge, MA

Shaffer, H, 'The most important unresolved issue in the addictions: Conceptual chaos', *Substance Use & Misuse,* 1997, 32(11): 1573-1580

Shaffer, H, 'What is addiction" A perspective', Harvard School of Medicine, http://divisiononaddictions.org/whatisaddiction.htm

Shea, C, 'The nature-nurture debate redux: Genetic research finally makes its way into the thinking of sociologists, *Chronicle of Higher Education*, 55, 2009

Smart, B, *Michel Foucault*, Routledge Key Sociologists Series, London, 1985 (2002, 2nd Ed'n)

Studlar, DT, *Tobacco Control: Comparative Politics & Policy in the US and Canada,* Broadview Press, Peterborough, Ontario, Canada, 2002

Studlar, DT, 'US tobacco control: Public health, political economy or morality policy?', *Review of Policy Research* September 2008, 2595): 393-410

Sussman, S et al, 'Adolescent nonsmokers, triers and regular smokers' estimates of cigarette smoking prevalence: When do overestimations occur and by whom?', *Journal Applied Social Psychology,* 2006, 18(7): 537-551

Tate, C, *Cigarette Wars: The triumph of the Little White Slaver,* Oxford University Press, 1999

Tatlovitch, R & Daynes, B, *Moral Controversies in American Politics: Cases of Regulatory Policy,* ME Sharpe, Publishers, Armonk, New York, 1998, 2005 (2nd Ed'n)

Taylor, DH et al, 'Benefits of smoking cessation for longevity', American Journal of Public Health, 2002, 92(6): 990-996

Thaler, R & Sunstein, C, *Nudge: Improving Decisions About Health, Wealth & Happiness,* Yale University Press, New Haven, 2008

Tilson, M, *Heavily Addicted Smokers: Understanding smoking behaviours & factors that influence quitting among heavily addicted smokers',* Propel Centre for Behavioural Research & Program Evaluation. University of Waterloo, Ontario, CTCRI, 1996 (17pp. mimeo): http://propelcdentre/uwaterloo.edu

Townsend, J, 'The role of tobacco taxation in tobacco control', in Iraj Abedian et al, (eds), *The Economics of Tobacco Control*, Applied Fiscal Research Centre, University of Cape Town, South Africa, 1998

Troyer, RJ & Markle, GE, *The Battle Over Smoking,* Rutgers University Press, New Brunswick, New Jersey, 1983

Turner, C & Spilich, GJ, 'Research into smoking or nicotine & human cognitive performance: Does the source of funding make a difference?', *Addiction* 2006, 92(11): 1423-1426

Tyndale, R & Sellers, E, 2004 www.research.utoronto.ca/edge/spring / CAMH

UKDH, *Consultation on the Future of Tobacco Control: Report,* December, 2008; www.dh.gov.uk/en/consultations/responsestoconsultations/DH_091382

Unger, J & Rohrbach, LA, 'Why do adolescents overestimate their peers' smoking prevalence? Correlates of prevalence estimates among California 8th grade students', *Journal of Youth & Adolescence*, 2002, 3192): 147-153

US-DHHS, *The Health Consequences of Involuntary Smoking. A Report of the Office of the Surgeon General,* CDC 87-8398, Atlanta, 1986

US-DHHS, *The Health Consequences of Smoking: Nicotine Addiction. A Report of the Office of the Surgeon General,* CDC 88-8406, Atlanta, 1988

US-DHHS, *Reducing Tobacco Use: A Report of the Office of the Surgeon General,* CDC-Atlanta, 2000

US-EPA, *Respiratory Health Effects of Passive Smoking: Lung Cancer & Other Disorders,* Environmental Protection Agency, EPA 600/6-90/006F, December, 1992, Washington, DC

US Public Health Service, Office of the Surgeon General, *Smoking & Health: Report of the Advisory Committee to the Surgeon General*, Washington, DC, January 11, 1064. Available in full on-line: www.http://surgeongeneralsreportssmoking

Valverde, M, *Diseases of the Will: Alcohol & the Dilemmas of Freedom,* Cambridge University Press, 1998

Vrecko, S, 'Folk neurology & the re-making of identity', *Molecular Interventions* 2006, 6(6):300-303

Vrecko, S, 'Neuroscience, power & culture: An introduction', *History of the Human Sciences* 2010, 23(1): 1-10

Ward, S, 'Filling the world with self-esteem: A social history of truth-making', *Canadian Journal of Sociology On-Line,* 1996, 21: 1-23

Wardman, D et al, 'Tobacco cessation drug therapy among Canada's Aboriginal people', *Nicotine & Tobacco Research,* 2005, 9(5): 607-611

Warner, KE, 'Health & economic implications of a tobacco-free society', *JAMA* 1987, 258(15): 2080-2086

Weinstein, ND, 'Accuracy of smokers' risk perceptions', *Annals of Behavioral Medicine*, 1998, 20(2): 135-140

West, R, 'The PRIME theory of motivation as a possible foundation for treatment of addictions', pp. 24-34 in Henningfield, JE, Santora, P & Bickel, WK (eds), *Addition Treatment: Science & Policy for the 21st Century*, Johns Hopkins University Press, Baltimore, MD [PRIME: Plans, Responses, Impulses, Motives, Evaluations]

West, R et al, 'Time for a change: Putting the trans-theoretical [stages of change] model to rest', *Addiction*2005, 100: 1036-39

World Health Organization (WHO), *Expert Committee on Addiction-Producing Drugs,* 13th Technical Report, #273 [s.4: 'Terminology in regard to drug abuse'], Geneva, 1964

WHO, *Neuroscience of Psychoactive Substance Abuse & Dependence,* Geneva, 2004

WHO, *Tobacco Free Initiative (TFI)*, Geneva; http://www.who/int/tobacco/en, accessed May 24, 2010.

Wilbert, J, *Tobacco & Shamanism in South America*, Yale University Press, New haven, 1987

Wilkinson, RG, *Unhealthy Societies: The Afflictions of Inequality*, Routledge, London, 1996

Wouters, C, *Informalization: Manners & Morals Since 1890*, SAGE, London, 2007

Zickler, P, Nicotine's multiple effects on the brain's reward system drive addiction', *NIDA Notes,* March 2003, 17(6): 2pp (on-line at http://drugabuse.gov/NIDA_Notes)